



## State of Vermont

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Department of Environmental Conservation  
Hazardous Materials Management Division  
103 South Main Street/West Office  
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November 22, 1994

Frank Gallagher  
Foremost Insurance Company  
PO Box 39  
Morrisonville, NY 12963

RE: Petroleum contamination at the Black Mountain Trailer Park  
(Site #94-1583)

Dear Mr. Gallagher:

The Sites Management Section (SMS) has received and reviewed the Nobis Engineering, Inc. October 18, 1994 Initial Investigation Report conducted for the above referenced site. Based on the information in this report, the SMS has concluded the following:

- In response to a release of an estimated 200 gallons of heating oil which occurred at mobile home unit #4 at the above referenced site, a total of five groundwater monitoring wells (MWs) were installed, two soil borings without monitoring wells were augured, and 80 tons of petroleum contaminated soils were disposed of using asphalt batching at MTS, Inc. in Epsom, New Hampshire.
- During the drilling operations, selected soil samples were collected from split spoon samples and submitted to a laboratory for analysis using EPA Method 8260. The MW-3 soil sample contained a total petroleum hydrocarbon (TPH) level of 2,000 ppm. Elevated levels of 1,2,4 trimethylbenzene (2,920 ppb), 1,3,5 trimethylbenzene (1,180 ppb), and naphthalene (1,040 ppb) as well as relatively low levels of xylenes (389 ppb) were indicated in the sample. Laboratory analyses did not detect volatile organic compounds (VOCs) or TPH in the soil samples from MW-4 and MW-5.
- Groundwater samples were collected from all onsite monitoring wells and submitted to a laboratory for analysis using EPA Method 8240. The analyses did not detect VOCs in any of the groundwater samples from the monitoring wells. However, EPA Method 8240 does not include trimethylbenzenes and naphthalene in the analysis.

Based on these findings, the SMS requests that you retain the services of your environmental consultant to perform the following additional work:

- A second round of groundwater sampling from all monitoring wells, with the exception of MW-1, should be completed to confirm the "non-detect" first round results. The

justification for excluding MW-1 from this analysis is based on the need for only one upgradient monitoring well. MW-1 is directly upgradient of MW-2 which is also upgradient of the observed contamination. Please have the collected samples analyzed using EPA Method 8260 and submit the results with a brief report which includes groundwater elevations and a groundwater contour map.

The SMS looks forward to the completion of this work. If you have any questions, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Moran", with a long horizontal flourish extending to the right.

Matthew Moran, Site Manager  
Sites Management Section

cc: Garret W. Graaskamp, Nobis Engineering, Inc.

OCT 21 1994

# NOBIS ENGINEERING, INC.

ENVIRONMENTAL, GEOTECHNICAL & CIVIL ENGINEERING

October 18, 1994  
File No. 48520

Sites Management Section  
Hazardous Materials Management Division  
Vermont Agency of Natural Resources  
103 South Main Street / West Office  
Waterbury, Vermont 05671-0404

Attention: Mr. Chuck B. Schwer  
Supervisor, Sites Management Section

Re: Initial Site Investigation Report  
Unit #4  
Black Mountain Trailer Park  
Brattleboro, Vermont 05301  
HMMD Site #94-1583

Dear Mr. Schwer:

On behalf of C.A.B. Services, Inc.(CAB), Nobis Engineering, Inc. is pleased to submit this Initial Site Investigation (ISI) report for the above-referenced property. The report details our investigative activities and findings at the site in response to your request of CAB dated May 18, 1994 to conduct an ISI.

If you have any questions or need additional information, please do not hesitate to call Mr. Garret Graaskamp.

Very truly yours,  
NOBIS ENGINEERING, INC.



Garret W. Graaskamp, CPG  
Senior Project Geologist



M. Patrick Mulheren  
Senior Project Manager

Enclosure

cc: Mr. Al Bryant, C.A.B. Services, Inc.

Phase (check one)	Type (check one)
<input checked="" type="checkbox"/> Initial Site Investigation	<input type="checkbox"/> Work Scope
<input type="checkbox"/> Corrective Action Feasibility Investigation	<input checked="" type="checkbox"/> Technical Report
<input type="checkbox"/> Corrective Action Plan	<input type="checkbox"/> PCF Reimbursement Request
<input type="checkbox"/> Corrective Action Summary Report	<input type="checkbox"/> General Correspondence
<input type="checkbox"/> Operations & Monitoring Report	

## INITIAL SITE INVESTIGATION

**#4 BLACK MOUNTAIN TRAILER PARK  
BLACK MOUNTAIN ROAD  
BRATTLEBORO, VERMONT  
SMS SITE #94-1583**

### A Property Owned By:

Mobil Home Unit #4 Owned By:

Barbara Glodgett  
#4 Black Mountain Park  
Brattleboro, VT 05301  
(802)254-9570

Tri-Park Cooperative Housing Corp.

P.O. Box 2198  
West Brattleboro, VT 05303  
(802)257-4877  
Contact: Alan Smart  
Maintenance Mgr.

### Prepared For:

C.A.B. Services, Inc.  
Rochester, New Hampshire

### Prepared by:

Nobis Engineering, Inc.  
Concord, New Hampshire

Contact: Garret W. Graaskamp, P.G.

October 1994  
File No. 48520



# NOBIS ENGINEERING, INC.

ENVIRONMENTAL, GEOTECHNICAL & CIVIL ENGINEERING

October 18, 1994  
File No. 48520

C.A.B. Services, Inc.  
P.O. Box 8  
Dover, New Hampshire 03820

Attention: Mr. Alan M. Bryant

Re: Initial Site Investigation Report  
Unit #4  
Black Mountain Trailer Park  
Brattleboro, Vermont 05301  
HMMD Site #94-1583

Dear Mr. Bryant:

Enclosed please find three (3) copies of the above-referenced report. We have forwarded one (1) copy directly to Mr. Charles Schwer, Supervisor, of the Sites Management Section (SMS) of the Hazardous Materials Management Division of the Vermont Agency of Natural Resources.

I have included in an Appendix, CAB's letter to the SMS detailing your initial response action at the site. However, as I discussed with you and Bruce, the SMS may ask for additional information and documentation concerning CAB's activities. I sent Bruce an original of Tri-Park's map of the site incase he needed it. Please let me know if I may be of further assistance.

Thank you for this opportunity to work with CAB. It has been our pleasure to complete this project for you.

Very truly yours,  
NOBIS ENGINEERING, INC.



Garret W. Graaskamp, CPG  
Senior Project Geologist



M. Patrick Mulheren  
Senior Project Manager

Enclosure

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## 1.00 EXECUTIVE SUMMARY

A release of an estimated 200 gallons of heating oil occurred on March 24, 1994 at mobile home Unit #4 of the Black Mountain Trailer Park in Brattleboro, Vermont. The heating oil had been stored in an above-ground tank. The release apparently occurred when ice fell from the roof above the tank and severed the copper transfer pipe leading to the furnace. The initial (emergency) clean-up response excavated about 80 tons of oil-saturated soil from the vicinity of the spill during the week following the release.

Twenty nine (29) mobile home units currently occupy the year-round mobile home facility. The facility is owned by Tri-Park Cooperative Housing Corporation of West Brattleboro, Vermont. The site is serviced by municipal water and sewer facilities. Mobile home Unit #4, where the release occurred, is owned by Ms. Barbara Glodgett.

Investigation activities at the site to date have included a preliminary screening survey of the soil vapor, the completion of two borings and five groundwater monitoring wells, and one round of laboratory analysis of selected soil and groundwater samples from the borings and monitoring wells. Only monitoring well MW-3, located immediately downgradient of the initial clean-up excavation area, had soils with detectable levels of heating oil-related contamination. Comparatively low levels of xylenes, naphthalene and other assorted non-hazardous substance list volatile organic compounds (VOCs) were detected. Total petroleum hydrocarbons were detected at 2,000 parts per million.

The results of laboratory analyses indicated that no detectable levels of petroleum-related VOCs (BTEX) were found in the groundwater samples collected from the wells.

The unnamed stream near the western and southern property lines of the site is the closest sensitive receptor to the release point. No other sensitive receptors (i.e., wellhead protection areas, Class I or II groundwater areas, residences with basements, or water supply wells) were located in downgradient settings within 1,000± feet of the subject site.

In summary, the data collected during this study does not suggest the presence of significant residual soil and groundwater contamination at the site. Groundwater quality has not been significantly impacted based on available sample results within the context of Vermont Groundwater Quality Standards.

Based on the above conclusions, Nobis Engineering, Inc. recommends the following for the site:

- A second round of groundwater sampling from the monitoring wells should be completed to confirm the "non-detect" first round results.
- Because groundwater quality has not been impacted according to Vermont Groundwater Quality Standards, and critical sensitive receptors do not appear threatened in proximal downgradient settings from the release area, development of a Design Management Zone requiring additional monitoring wells and specific remedial activities does not seem warranted at this time.

## 2.00 INTRODUCTION

In accordance with our July 5, 1994, Work Plan submitted to the Vermont Agency of Natural Resources (VTANR), Hazardous Materials Management Division (HMMD), Sites Management Section (SMS), Nobis Engineering, Inc. has performed an Initial Site Investigation (ISI) of Unit #4 (site) at the Black Mountain Trailer Park property located on Black Mountain Road in Brattleboro, Vermont. This ISI was requested by the SMS in their letter to Mr. Frank Gallagher

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of Foremost Insurance Company dated May 18, 1994, in response to the observation of apparent soil and groundwater contamination during initial cleanup of a release of heating oil to the ground surface from a 275-gallon above-ground storage tank (AST) at the site on March 24, 1994. The initial cleanup was conducted by C.A.B. Services, Inc. (CAB) of Rochester, New Hampshire. The objective of our work was to assess the nature, extent, and magnitude of contamination and identify potential threats to public health and the environment in accordance with current (May 1994) VTANR Guidance for ISIs. This report is subject to the limitations in Appendix A.

### **3.00 SCOPE OF WORK**

To complete this ISI, the following services were performed:

- Prepared and submitted a Work Plan detailing the tasks involved in the Initial Site Investigation to the SMS.
- Performed a site visit to observe surficial and general environmental conditions at the site and adjacent environs.
- Reviewed CAB's Initial Cleanup Summary letter submitted to the SMS.
- Contacted Brattleboro municipal officials for information pertaining to environmental conditions at the site and adjacent environs, as well as information regarding possible sensitive receptor locations, including drinking water supply wells, well head protection areas, and residences with basements, and wetlands within 1,000± feet downgradient of the site. Information available from the Brattleboro municipal offices was also be reviewed to discern past and present uses of the site and adjacent properties.
- Performed a preliminary soil vapor survey to evaluate and delineate the presence of ionizable compounds in the soil vapors related to the heating oil-contaminated soil and/or groundwater beneath the site. The soil vapor data were used to evaluate potential migrational pathways to strategically locate the test borings and monitoring wells.
- Completed five (5) test boring/monitoring well installations and two (2) test borings (no wells) to assess subsurface conditions and allow for subsequent groundwater sampling locations. Continuous split-spoon soil samples were collected from the test borings and the soil samples were screened in the field for ionizable compounds.
- Performed a well elevation survey. Measurements of groundwater elevations were obtained to construct a groundwater contour map indicating groundwater flow directions and flow gradients.
- Performed one round of groundwater sampling from the five monitoring wells for submittal to a State-certified analytical laboratory for analyses for volatile organic compounds (VOCs) using EPA Method 624.
- Performed an evaluation of the extent of contamination and the site hydrogeologic conditions, including an assessment of subsurface stratigraphy; groundwater flow directions and groundwater quality; and the potential impact on nearby receptors. A conceptual model of site conditions was prepared based on this data.
- Prepared this report summarizing the results of the investigation, including our opinion regarding further investigation and remedial measures.

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#### **4.00 SITE DESCRIPTION AND HISTORY**

##### **4.10 The Site and Vicinity**

The subject site is identified as trailer unit #4 (Barbara Glodgett, owner) on Brattleboro Assessor's Map 7, Block 2, Lot 64. Lot 64 is the entire Black Mountain Trailer Park (park), owned by Tri-Park Cooperative Housing Corporation (Tri-Park) of Brattleboro, Vermont. The park currently consists of 29 mobile trailer homes on a 7.4± acre parcel. The park and general vicinity are serviced by municipal water and sanitary sewer facilities. The piping for the water and sewer facilities runs underground beneath the general centers of the trailers. A locus plan showing the approximate site location is presented as Figure 1 and a site area sketch (receptor map) is presented as Figure 2. A site sketch showing site features is included as Figure 3 and selected site photographs are included as Appendix B. Table 5 is a list of the site owner and abutters to the park.

The site is located in a relatively narrow, steep-sided valley. The topography of the valley floor slopes to the south at a gentle to moderate grade. A small unnamed stream flows along the west side of the valley on the opposite side (west side) of Black Mountain Road from the park. The stream eventually crosses Black Mountain Road and passes along the southern property line of the park. The stream ultimately discharges to the Connecticut River approximately one-half mile east of the site.

No storm water catch basins were observed on the property. Storm water generally flows south as sheet flow over lawn and paved driveway areas of the park. The runoff eventually discharges to the unnamed stream at the south end of the park.

The site is situated in a lightly developed, rural/residential setting. Commercial/retail properties are found along Vermont Route 5 approximately one-quarter mile east of the park. Properties adjacent to the park include (refer to Figure 2):

- A single-family residence to the north.
- Undeveloped woodland to the northeast.
- Highway right-of-way for Interstate 93 to the southeast.
- A large residential lot and a municipal sewer pump station lot to the southwest.
- Undeveloped woodland to the west.

##### **4.20 Site History**

To develop a general history of site usage and ownership, Nobis Engineering, Inc. reviewed the following available information:

- Brattleboro Assessor's Property Cards, Tax Maps and file deed information.
- Discussions with Mr. Jamie Dodge, office manager for Tri-Park.

Available information indicates that the site was undeveloped woodland prior to 1958, at which time Mr. Donald Record began phased development of the trailer park. Development of the site area was started at this time. Assessor's records for trailer unit #4 at the spill site indicate that the trailer was probably placed at the site in 1963. The following table are the ownership history of the site since its development.

<u>Owner of Record</u>	<u>Period of Ownership</u>
Tri-Park Cooperative Housing Corp.	December 1989 to present
Housing Foundation, Inc.	November 1987 to December 1989
Donald Record	unknown to November 1987

#### **4.30 Project Background**

The following information is summarized from CAB's letter dated April 27, 1994 to the SMS describing the initial cleanup response at the site (Appendix C). On Friday, March 25, 1994, CAB was notified of a release of home heating oil from an AST at the site by Mr. Frank Gallagher of Foremost Insurance Company. CAB personnel arrived that day to observe the site conditions and excavate an exploratory test pit. Approximately 200 gallons of heating oil are estimated to have been released to the ground surface when ice from the roof of the trailer apparently fell and cut the transfer piping from the tank to the trailer furnace. Between Monday, March 28, and Friday, April 1, 1994, CAB personnel conducted an initial cleanup response at the site including temporarily moving trailer unit #4 from the site, excavation of approximately 75 cubic yards of petroleum-contaminated soil, and the collection of free-phase product observed in the excavation with sorbent pads. The contaminated soil was stockpiled on, and covered with, polyethylene sheeting near the south end of the park. CAB contracted with MTS, Inc. (a cold-mix asphalt batching facility) of Epsom, New Hampshire to test and remove the contaminated soils from the property. On May 5, 1994, the stockpiled soils (80.37 tons) were transported to MTS Inc.'s facility for treatment and disposal. The laboratory reports of the hazardous waste analyses of the contaminated soils, bills of lading, and the certificate of destruction are attached in Appendix G.

### **5.00 REVIEW OF STATE AND LOCAL RECORDS**

To obtain information regarding possible hazardous waste-related environmental concerns at the site and site vicinity, Nobis Engineering, Inc. reviewed information available from the following sources:

#### **Municipal Records:**

- Brattleboro Assessor's Office records (May 26, 1994).
- Brattleboro Fire Department records (September 27, 1994).

The municipal files reviewed did not indicate additional properties within 1,000 feet and upgradient of the subject site which had experienced a release of petroleum product.

### **6.00 SUBSURFACE EXPLORATIONS AND SOIL SAMPLING**

#### **6.10 Soil Vapor Survey**

On May 8, 1994, Nobis Engineering personnel conducted a preliminary soil vapor survey (SVS) in the site vicinity to delineate the general presence of ionizable compounds in the soil vapors which may be related to heating oil-contaminated soil and/or groundwater beneath the site. The soil vapor was collected from narrow probe holes completed to depths of 2.0 to 3.0 feet at selected upgradient and downgradient locations across the site. The soil vapor was screened with an organic vapor meter (OVM) equipped with a photoionization detector. The SVS data were used to identify potential migrational pathways of the contamination and to strategically locate future test borings and monitoring wells. Results of the SVS OVM readings were plotted to

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evaluate general trends in vapor concentration beneath the site. The OVM soil vapor readings are presented on the Soil Vapor Survey Map (Figure 4).

The results of the soil vapor survey indicate that the oil-contamination was concentrated near the AST release point and near the trend of the underground water and sewer lines downgradient of the release point. The OVM readings of the soil vapor samples ranged from non-detect to 89 parts per million (ppm). Detectable levels of VOCs were not found in the soil vapor measured at locations greater than about 60 feet downgradient of the release point.

#### **6.20 Monitoring Wells**

On May 9, 1994, five (5) soil test borings with monitoring well installations (MW-1 through MW-5) and two test borings with no well installations (B-1 and B-2) were completed at the subject site. The test borings and monitoring well installations were drilled at the site by Great Works Test Boring, Inc. of Rollinsford, New Hampshire, under the observation of Nobis Engineering, Inc.

The approximate locations of the test borings and monitoring wells are shown on Figure 3. A description of the test boring/monitoring well installation procedures is included in Appendix D and logs of the test boring/monitoring well installations are included in Appendix E. A summary of the test borings and well locations is provided below:

<u>Boring Designation</u>	<u>Basis for Location</u>
MW-1	Upgradient portion of the site
MW-2	Upgradient and near SVS low level readings adjacent to AST
MW-3	Downgradient of AST and limit of excavated area
MW-4	Downgradient limit of detected SVS readings
MW-5	Side gradient of underground utilities and AST
B-1	Side gradient of underground utilities and AST
B-2	Side gradient of underground utilities and AST

#### **6.30 Field Screening of Soil Samples**

The soil samples collected from the test borings were screened in the field for total concentrations of volatile organic compounds (total VOCs) using a Photovac MicroTIP organic vapor meter (OVM) equipped with a photoionization detector (10.6 eV lamp). The MicroTIP OVM responds readily to most VOCs but does not register methane or natural components of air such as oxygen, nitrogen, or carbon dioxide. The MicroTIP OVM has a detection limit of approximately one part per million (ppm) by volume, referenced to an isobutylene-in-air standard. Screening of the soil samples collected from the test borings for total VOCs indicated concentrations ranging from "not detected" (ND) to 232 ppm for unsaturated soils and from ND to 772 ppm in the saturated soil samples (groundwater was encountered at a depth of approximately 5 feet). The two maximum readings were both obtained in boring MW-3. The maximum readings from the remaining monitoring wells and borings were 6 and 8 ppm for unsaturated and saturated conditions, respectively. The soil screening procedures are described in Appendix D and the soil screening results from the test borings are included in Table 1.

#### **6.40 Laboratory Analysis of Soil Samples**

One soil sample with the highest MicroTIP OVM reading from each of the side-gradient or downgradient monitoring wells (MW-3, MW-4 and MW-5) was submitted to Aquarian Analytical, Inc. of Canterbury, New Hampshire for analyses of VOCs using EPA Method 8260 and total petroleum hydrocarbons (TPH) using EPA Method 8100 (modified). Laboratory analyses did not indicate the presence of VOCs or TPH in the soil samples obtained from test

borings MW-4 or MW-5. Only a limited number of contaminants, including o-xylene (0.39 ppm) and naphthalene (1.04 ppm), were detected in MW-3. The MW-3 soil sample yielded a TPH level of 2,000 ppm. The laboratory results indicated the contaminants are present at relatively low to modest levels. The VTANR does not have any regulations regarding soil clean-up criteria at this time. Copies of the laboratory analytical reports are included in Appendix F and the laboratory results of the soil analyses are summarized in Table 2.

## **7.00 SITE GEOLOGY AND HYDROGEOLOGY**

### **7.10 Surficial Geology**

Overburden soils encountered in the test borings were visually classified in the field in accordance with the Burmister Classification System, a summary of which is included in Appendix E. Soils encountered in the test borings generally consisted of three layers.

- The top layer was a medium-grained sand. It was typically described in the borings as a loose, moderate brown, fine to medium sand with trace amounts of silt. It was generally present to a depth of about 4 feet. This material is interpreted as a natural fluvial deposit.
- The second layer was sand and gravel. It was typically described in the borings as a loose to medium dense, moderate brown with grayish tint, sand and gravel. The contact with the overlying sand was generally gradational. The sand and gravel was present at depths ranging from about 2.5 to 8 feet. This material is interpreted as a natural fluvial deposit.
- The deepest layer encountered was a fine sand and silt. It was typically described in the borings as a loose, moderate olive-brown, fine sand and silt. The contact with the overlying sand and gravel was sharp. Individual layers within the unit were about one centimeter thick and approximately horizontal in orientation. The sand and silt unit was encountered at a depth of about 8 feet. This material is interpreted as a lacustrine or low-energy fluvial deposit.
- The fill used to replace the contaminated soils during the initial cleanup was present in MW-3. The fill material consisted of a moderate brown, medium sand with trace amounts of silt and gravel.
- Bedrock was not encountered in the test borings.

### **7.20 Groundwater Levels and Flow Directions**

Groundwater levels in the monitoring wells were measured by Nobis Engineering, Inc. prior to the groundwater sampling rounds using a Solinst electronic water level meter. Groundwater ranged from about 4.6 to 5.5 feet below the existing ground surface. Groundwater elevations for the wells were calculated based on data obtained during a well elevation survey (refer to Appendix D) and resultant elevation data are shown on Figure 5 and summarized in Table 3.

Based on the observed static groundwater elevations, groundwater flow beneath the site appears to be in a general southerly direction, consistent with the topographic trend of the enclosing valley. Fluctuations in groundwater levels will occur due to variations in precipitation, surface runoff, temperature, seasonal fluctuations, and other factors not encountered during this study. Local groundwater flow anomalies may also exist due to the influence of buildings, paved areas, underground utilities, and localized topography.

The driving force of groundwater flow is the hydraulic gradient which is defined as the change in groundwater elevation per unit distance of flow in an aquifer. The hydraulic gradient of the soils at the subject site was estimated to range from 0.01 to 0.02 feet per foot. Soil porosity is a



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measure of the volume of void spaces in the soil mass. The porosity of the site soils was estimated at 0.3 to 0.4 (dimensionless). The hydraulic conductivity of these soils is estimated to range from 0.03 to 0.33 feet per day (ft/day). The transport velocity of groundwater can be estimated by using a form of Darcy's Law<sup>1</sup> and was estimated to range from 3 to 80 feet per year in the upper two layers of sand and sand and gravel materials. Refer to Appendix H for calculation worksheet.

## **8.00 SAMPLING AND ANALYSES OF GROUNDWATER**

### **8.10 Sampling of Groundwater**

The groundwater samples were collected to test for heating oil-related contamination as per VTANR groundwater protection regulations<sup>2</sup>. Groundwater samples were collected on September 7, 1994, by Nobis Engineering, Inc. from MW-1 through MW-5. A discussion of sampling procedures is included in Appendix D. Groundwater from each well was first checked for the presence of floating product. Floating product was not observed in any of the monitoring wells. The groundwater samples were submitted to Aquarian Analytical, Inc. of Canterbury, New Hampshire for analysis of VOCs using EPA Method 624.

### **8.20 Groundwater Analytical Results**

Laboratory analyses of the groundwater samples collected on September 7, 1994 did not detect VOCs in any of the monitoring wells. Please refer to the laboratory reports in Appendix F for specific detection limits for each compound. The data is summarized in Table 4.

## **9.00 CONCEPTUAL HYDROGEOLOGIC MODEL**

Based on the results of the investigation, a conceptual model of the site is as follows:

- Based on observations made during test boring drilling, the site soil stratigraphy generally consists of glacio-fluvial sands and gravel overlying glacio-lacustrine or low-energy fluvial fine sand and silt. No bedrock was observed in the test borings performed for this study.
- The site is located in a relatively narrow, steep-sided valley. The topography of the valley floor slopes to the south at a gentle to moderate grade. A small unnamed stream flows along the west side of the valley on the opposite side (west side) of Black Mountain Road from the park. The stream eventually crosses Black Mountain Road and passes along the southern property line of the park. The stream ultimately discharges to the Connecticut River approximately one-half mile east of the site.
- Underground public utilities include electric, telephone, water and sewer facilities. The electric and telephone lines as marked by the utility appear to be generally limited to the property line area along Black Mountain Road. Some telephone lines may follow the water and sewer lines which pass in a southerly direction beneath the centers of the trailers in the vicinity of the spill area.
- The primary migration pathway for the contamination appears to be within the permeable sand and gravel layers typically found in the top 8 feet of overburden at the site. The

<sup>1</sup> "Seepage, Drainage and Flow Nets", by Harry Cedergren.

<sup>2</sup> Rule #88-37, Chapter 12 "Vermont Groundwater Protection Rule & Strategy", of the Vermont Code of Administrative Rules, effective September 29, 1988.

trenches for the water and sewer lines may form secondary routes if and where the fill is more permeable than the natural material. Generally the fill and natural material are expected to have similar hydrogeologic characteristics. The underlying bedded sand and silt layer is assumed to be less permeable than the upper sand and gravel layers, especially in a vertical direction, which may be expected to limit the downward migration of the contaminants at times of seasonally low water table levels.

- The unnamed stream near the western and southern property lines of the site is the closest sensitive receptor to the release point. No other sensitive receptors (i.e., wellhead protection areas, Class I or II groundwater areas, residences with basements, or water supply wells) were located in downgradient settings within 1,000± feet of the subject site. Based on current available information, the risk of significant impact to sensitive receptors from conditions related to this release appear low.

## **10.00 SUMMARY AND RECOMMENDATIONS**

### **10.10 Summary**

The significant findings of this Initial Site Investigation are summarized as follows:

- A release of an estimated 200 gallons of heating oil occurred at mobile home unit #4 of the Black Mountain Trailer Park. The release was reported to Foremost Insurance Company on March 25, 1994. Black Mountain Trailer Park is identified on Brattleboro Tax Map 7, Block 2, Lot 64.
- The general downgradient area within 1,000± feet of the release is serviced by a municipal water supply.
- Approximately 80 tons of heating oil-contaminated soil were excavated from beneath unit #4 and stockpiled at the site by C.A.B. Services, Inc. The soils were disposed of by MTS, Inc. at their cold-mix asphalt batching plant in Epsom, New Hampshire on May 5, 1994.
- A total of five (5) groundwater monitoring wells were installed at the subject site. In addition, two (2) test borings without monitoring well installations were performed on the site. Split-spoon soil samples obtained during the drilling operations were screened in the field with an OVM for total VOC concentrations. In addition, selected soil samples were submitted to a state-certified analytical laboratory for analysis of VOCs and TPH.
- Laboratory analyses of soil samples did not detect VOCs or TPH in the soil samples from MW-4 or MW-5. The MW-3 soil sample yielded a TPH level of 2,000 ppm. Only a limited number of contaminants, including o-xylene (0.39 ppm) and naphthalene (1.04 ppm), were detected in MW-3. The laboratory results indicated the contaminants are present at comparatively low to modest levels.
- The monitoring wells were sampled and the groundwater samples were submitted to a state-certified analytical laboratory for analysis of VOCs. The analyses did not detect VOCs in any of the groundwater samples from the monitoring wells.
- Soil stratigraphy at the site generally consisted of glacio-fluvial sand and gravel overlying a glacio-lacustrine or low-energy fluvial sand and silt. Bedrock was not encountered in the test borings.
- Groundwater elevation surveys and transport velocity calculations showed groundwater at the site to flow generally northwesterly at a rate of 3 to 80 feet per year in the sand and gravel layers. The significant migration pathway appears to be in the upper sand and gravel layers. The underground trenches for water and sewer at the site may locally

October 18, 1994

influence the migration pathway if and when the fill material is more permeable than the enclosing natural sand and gravel. The underlying sand and silt layers likely limit vertical migration of the contaminants.

- The unnamed stream near the western and southern property lines of the site is the closest sensitive receptor to the release point. No other sensitive receptors (i.e., wellhead protection areas, Class I or II groundwater areas, residences with basements, or water supply wells) were located in downgradient settings within 1,000± feet of the subject site.

In summary, the data collected during this study do not suggest the presence of significant residual soil and groundwater contamination at the site. Groundwater quality has not been significantly impacted based on available sample results within the context of Vermont Groundwater Quality Standards.

#### **10.20 Recommendations**

Based on the above conclusions, Nobis Engineering, Inc. recommends the following:

- A second round of groundwater sampling from the monitoring wells should be completed to confirm the "non-detect" first round results.
- Because groundwater quality has not been impacted according to Vermont Groundwater Quality Standards, and critical sensitive receptors do not appear threatened in proximal downgradient settings from the release area, development of a Design Management Zone requiring additional monitoring wells and specific remedial activities does not seem warranted at this time.

# TABLES

TABLE 1  
SUMMARY OF FIELD SCREENING  
OF SOIL SAMPLES

#4 Black Mountain Trailer Park  
Black Mountain Road  
Brattleboro, Vermont  
HMMD Site #94-1583

Sample Number	Depth Interval (ft.)	PID Reading (ppm)	Sample Number	Depth Interval (ft.)	PID Reading (ppm)
MW-1			MW-5		
S-1	0' - 2'	3.0	S-1	0' - 2'	4.0
S-2	2' - 4'	4.0	S-2	2' - 4'	6.0
S-3*	4' - 6'	6.0	S-3*	4' - 6'	7.0
S-4*	8' - 10'	4.0	S-4*	6' - 8'	8.0
			S-5*	8' - 10'	6.0
MW-2			B-1		
S-1	0' - 2'	5.0	S-1	0' - 2'	ND
S-2	2' - 4'	5.0	S-2	2' - 4'	ND
S-3*	4' - 6'	3.0	S-3*	4' - 6'	ND
S-4*	6' - 8'	2.0	S-4*	6' - 8'	ND
			S-5*	8' - 10'	ND
MW-3			B-2		
S-1	0' - 2'	53	S-1	0' - 2'	4.0
S-2	2' - 4'	232	S-2	2' - 4'	4.0
S-3*	4' - 6'	772	S-3*	4' - 6'	4.0
S-4*	6' - 8'	--	S-4*	6' - 8'	4.0
S-5*	8' - 10'	ND	S-5*	8' - 10'	4.0
MW-4					
S-1	0' - 2'	5.0			
S-2	2' - 4'	6.0			
S-3*	4' - 6'	7.0			
S-4*	6' - 8'	7.0			
S-5*	8' - 10'	5.0			

NOTES:

- 1) Photoionization detector (PID) readings are in parts per million (ppm) referenced to an isobutylene-in-air standard.
- 2) PID readings obtained from head-space tests of 8-ounce jar soil samples obtained from the test borings on May 9, 1994.
- 3) PID readings obtained by Nobis Engineering, Inc. personnel using a Photovac MicroTip MP-100 PID equipped with a 10.6 eV lamp.
- 4) "\*" : saturated sample.
- 5) "--" : insufficient sample for headspace screening.
- 6) "ND" : Not detected with PID.

**TABLE 2**  
**SUMMARY OF SOIL ANALYSES**

#4 Black Mountain Trailer Park  
Black Mountain Road  
Brattleboro, Vermont  
HMMD Site #94-1583

Boring No.	Sampling Date	Parameter							
		VOCs							TPH
		Benzene	Toluene	Ethylbenzene	Xylenes (total)	MIBE	Napthalene	Other VOCs	
MW-3 (S-3)	5/9/94	ND	ND	ND	0.39	ND	1.04	5.75	2,000
MW-4 (S-3)	5/9/94	ND	ND	ND	ND	ND	ND	ND	ND
MW-5 (S-3)	5/9/94	ND	ND	ND	ND	ND	ND	ND	ND

**NOTES:**

- 1) Concentrations are reported as milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).
- 2) VOC analytical results were determined by EPA Method 8260. TPH analytical results were determined by EPA Method 8100 (Modified).
- 3) ND: The parameter was not detected above the laboratory method detection limit. Refer to laboratory reports for specific detection limits.
- 4) TPH: Total Petroleum Hydrocarbons.
- 5) VOC: Volatile Organic Hydrocarbons.

**TABLE 3**  
**SUMMARY OF GROUNDWATER ELEVATIONS**

#4 Black Mountain Trailer Park  
Black Mountain Road  
Brattleboro, Vermont  
HMMD Site #94-1583

Well No.	Reference Elevation (ft.)	Date	Depth to Groundwater (ft.)	Groundwater Elevation (ft.)	Product Thickness (ft.)
MW-1	99.33	9/7/94	4.75	94.58	0
MW-2	99.33	9/7/94	5.50	93.83	0
MW-3	98.55	9/7/94	5.40	93.15	0
MW-4	97.46	9/7/94	4.65	92.81	0
MW-5	98.05	9/7/94	5.30	92.75	0

**NOTES:**

- 1) Monitoring wells were installed on May 9, 1994 by Great Works Test Boring, Inc. under the observation of Nobis Engineering, Inc.
- 2) Well elevations are referenced to the top of the well PVC pipe. Reference elevations are based on a datum of 100.00 feet established on a nail in Telephone Pole #4A.
- 3) Groundwater level measurements were obtained by Nobis Engineering, Inc. personnel using a Solinst electronic water level indicator.

TABLE 4  
SUMMARY OF GROUNDWATER ANALYSES

#4 Black Mountain Trailer Park  
Black Mountain Road  
Brattleboro, Vermont  
HMMD Site #94-1583

Boring No.	Sampling Date	Parameter					
		Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE	Other VOCs
MW-1	9/7/94	ND	ND	ND	ND	ND	ND
MW-2	9/7/94	ND	ND	ND	ND	ND	ND
MW-3	9/7/94	ND	ND	ND	ND	ND	ND
MW-4	9/7/94	ND	ND	ND	ND	ND	ND
MW-5	9/7/94	ND	ND	ND	ND	ND	ND
Drinking Water Standards		5	2,420	680	400	No Standard	varies

NOTES:

- 1) All concentrations are reported as micrograms per liter (ug/L), equivalent to parts per billion (ppb).
- 2) VOC: volatile organic compounds.
- 3) ND: The parameter was not detected above the laboratory method detection limit.  
Refer to laboratory reports for specific detection limits.
- 4) Laboratory Method: EPA Method 624.
- 5) Rule #88-37, Chapter 12 "Vermont Groundwater Protection Rule and Strategy" of the Vermont Code of Administrative Rules, effective September 29, 1988.

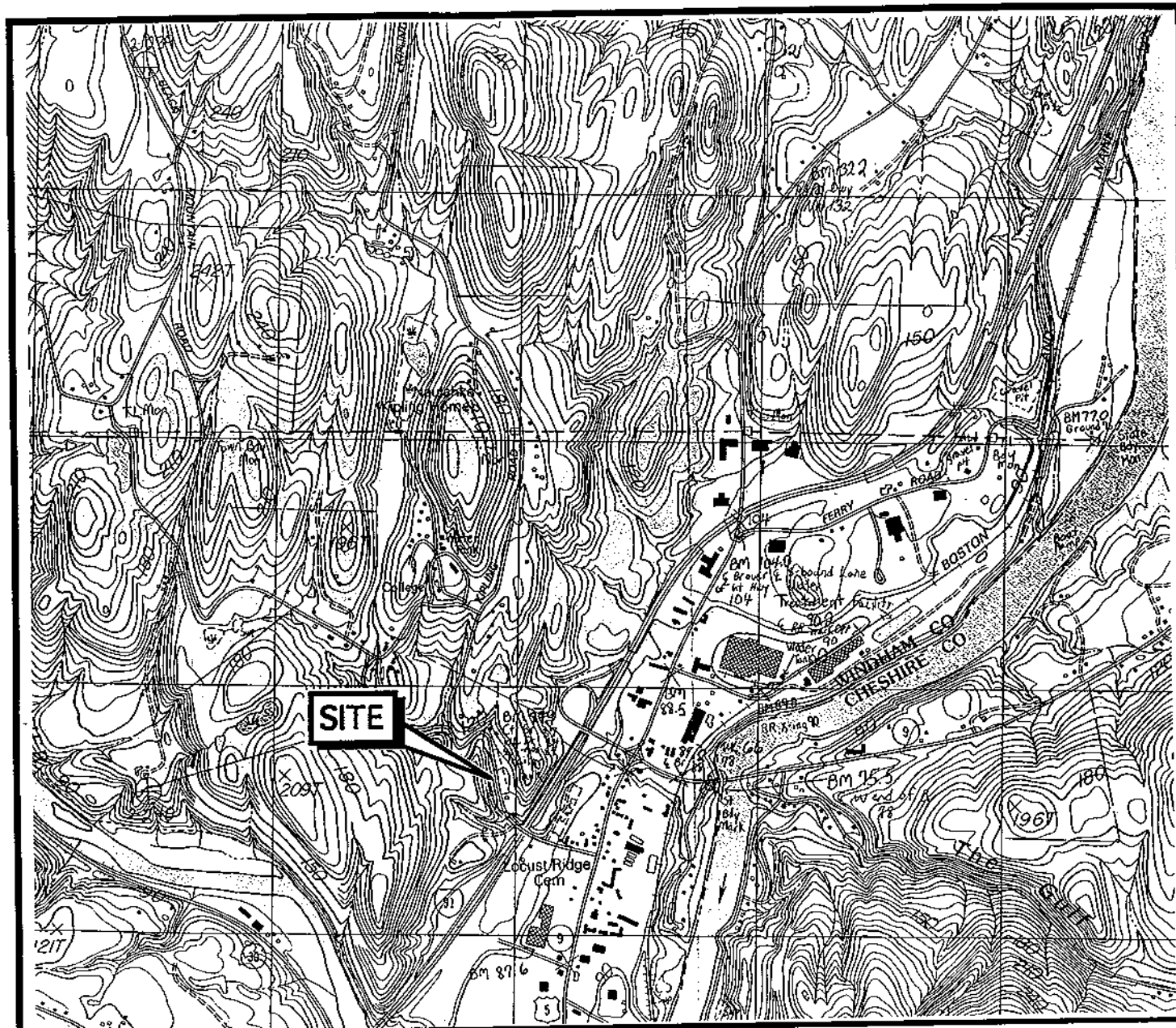


TABLE 5

Site Information  
#4 Black Mountain Trailer Park  
Brattleboro, Vermont

<u>Name</u>	<u>Relationship to Property</u>	<u>Address</u>	<u>Telephone #</u>
Tri-Park Cooperative Housing Corp. Contact: Alan Smart	Property Owner	P.O. Box 2198 W. Brattleboro, VT 05303	(802)257-4877
Barbara Glodgett	Unit #4, Owner	#4 Black Mountain Park Brattleboro, VT 05301	(802)254-9570
World Leaning, Inc.	Abutter	165 Teipling Rd. Brattleboro, VT 05301	(802)257-7751
Evelyn B. Cobb	Abutter	Black Mountain Rd. Brattleboro, VT 05301	no number
Joseph & Joan Thompson	Abutter	237 Black Mountain Rd. Brattleboro, VT 05301	(802)257-5535
Town of Brattleboro	Abutter (sewer pump station)	Selectman's Office 230 Main Street Brattleboro, VT 05301	(802)254-4541
Emerson & Alicia Thomas	Abutter	122 Black Mountain Rd. Brattleboro, VT 05301	(802)254-4603
VT Agency of Transportation Contact: Alan Remick District Transportation Administrator	Abutter	Route US 5 Dummerston, VT 05301	(802)254-5011

# FIGURES



QUADRANGLE LOCATION

USGS TOPOGRAPHIC MAPNEWFANE, VT.— N.H.  
QUADRANGLE

1984

APPROXIMATE SCALE  
1 : 25,000 — METRIC**NOBIS**  
**ENGINEERING, INC.**

NEW HAMPSHIRE • MAINE • TEXAS

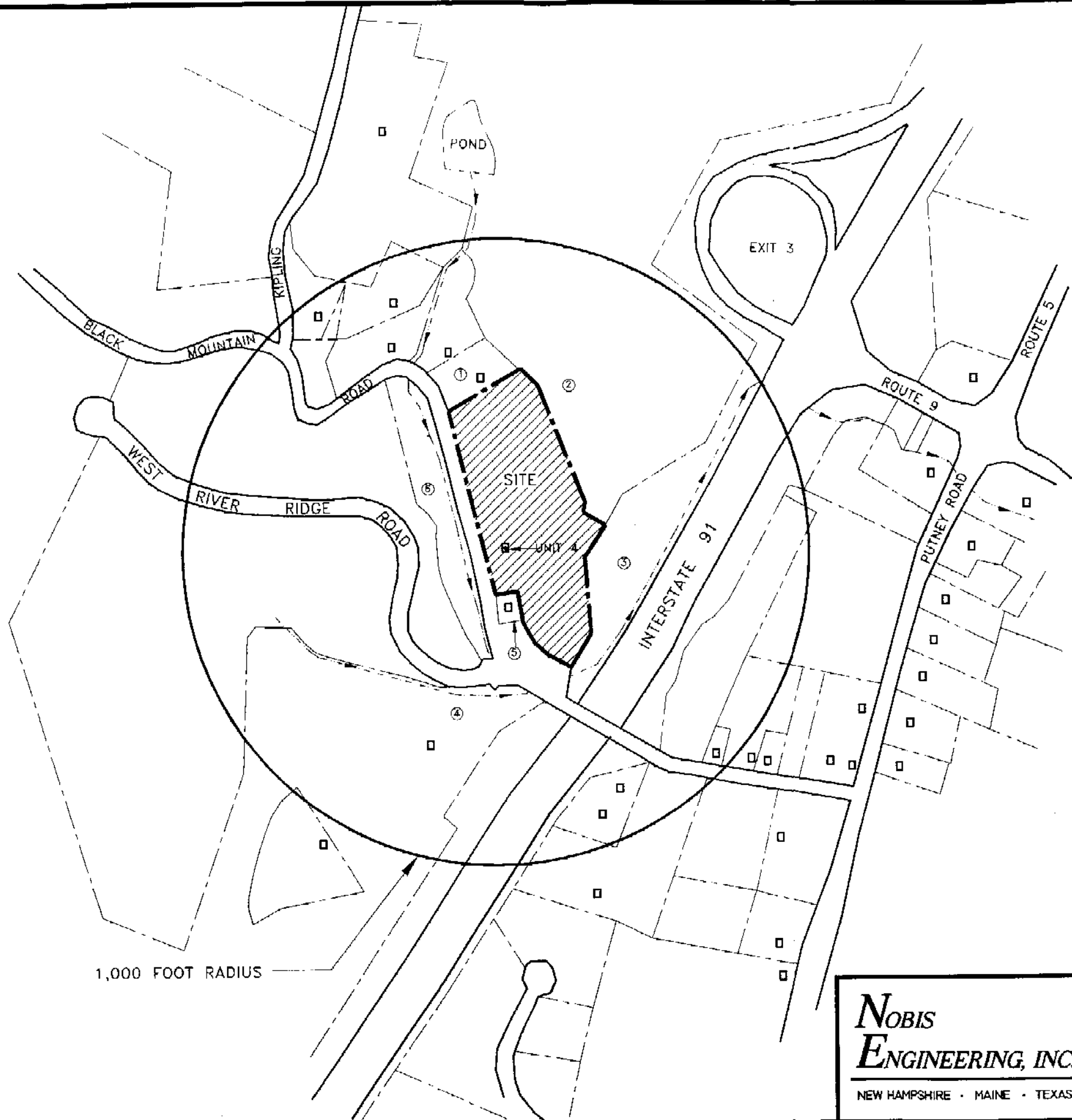
INITIAL SITE INVESTIGATION

#4 BLACK MOUNTAIN PARK  
BRATTLEBORO, VERMONT

LOCUS PLAN

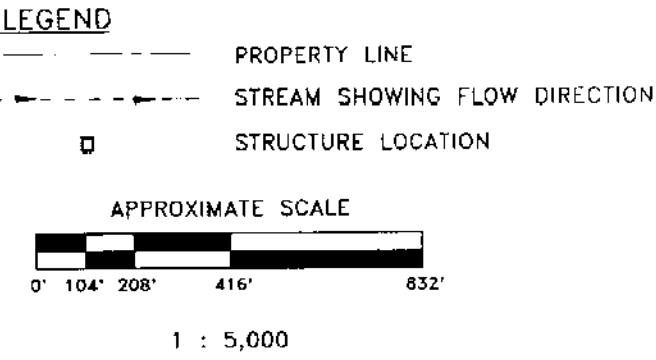
OCTOBER 1994

FIGURE 1



ABUTTERS		
Location No.	Name	Land Use; Map #, Blk #, Lot #
1	Joseph P. & Joan M. Thompson	Residence; Map 7, Blk #2, Lot 63
2	World Learning, Inc.	Residence; Map 7, Blk 2, Lot 23
3	State of Vermont	Highway ROW, Map 7, Blk 2, Lot-none
4	Alicia A. & Emerson A. Thomas	Residence; Map 7, Blk 2, Lot 68.1
5	Town of Brattleboro	Sewer Pump Sta., Map 7, Blk 2, Lot 65
6	Evelyn B. Cobb	Undeveloped; Map 7, Blk 2, Lot 59

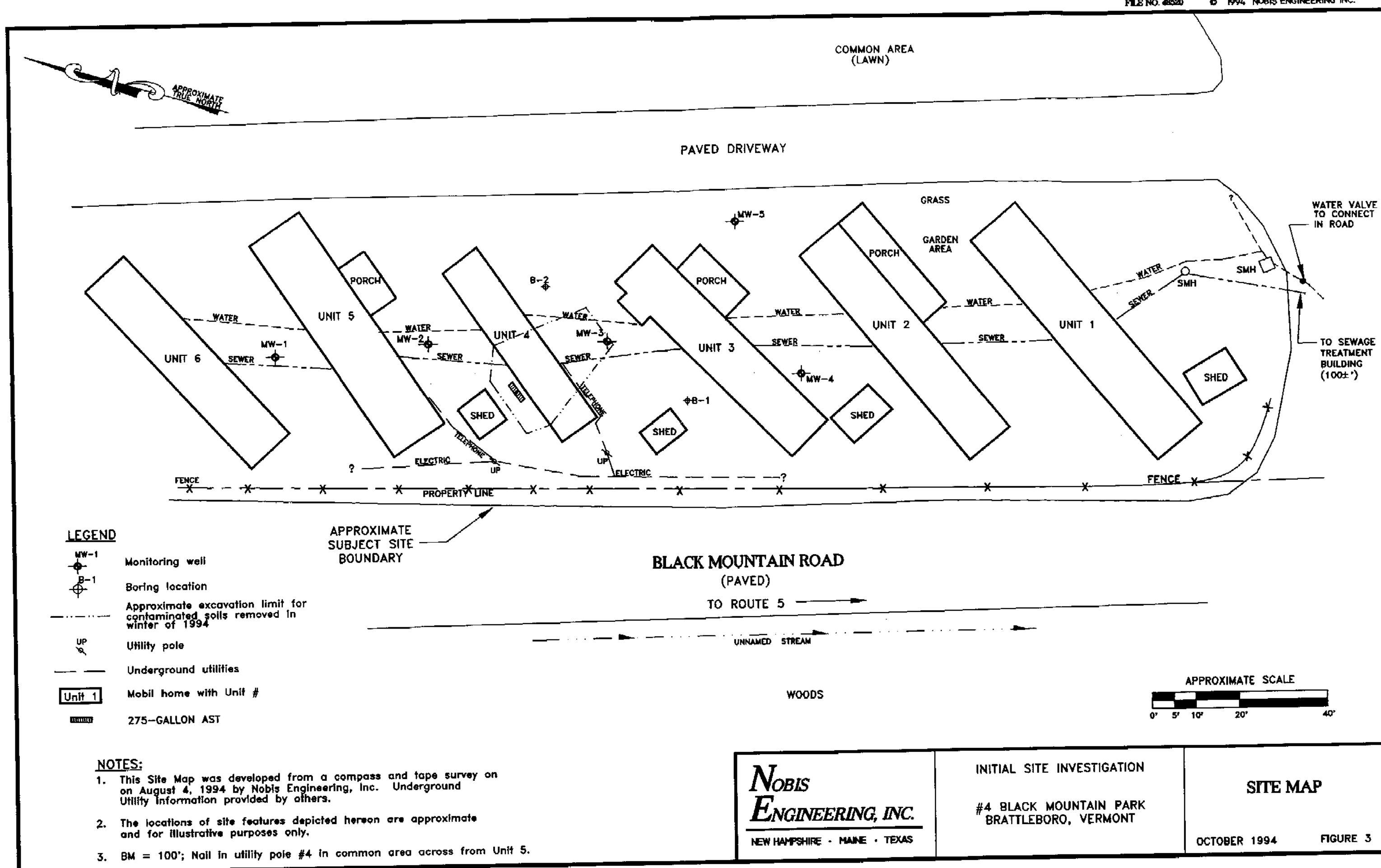
- NOTES:
1. This Site Area Sketch was developed from Brattleboro Tax Maps and site observations by Nobis Engineering, Inc.
  2. The locations of site features depicted hereon are approximate and for illustrative purposes only.

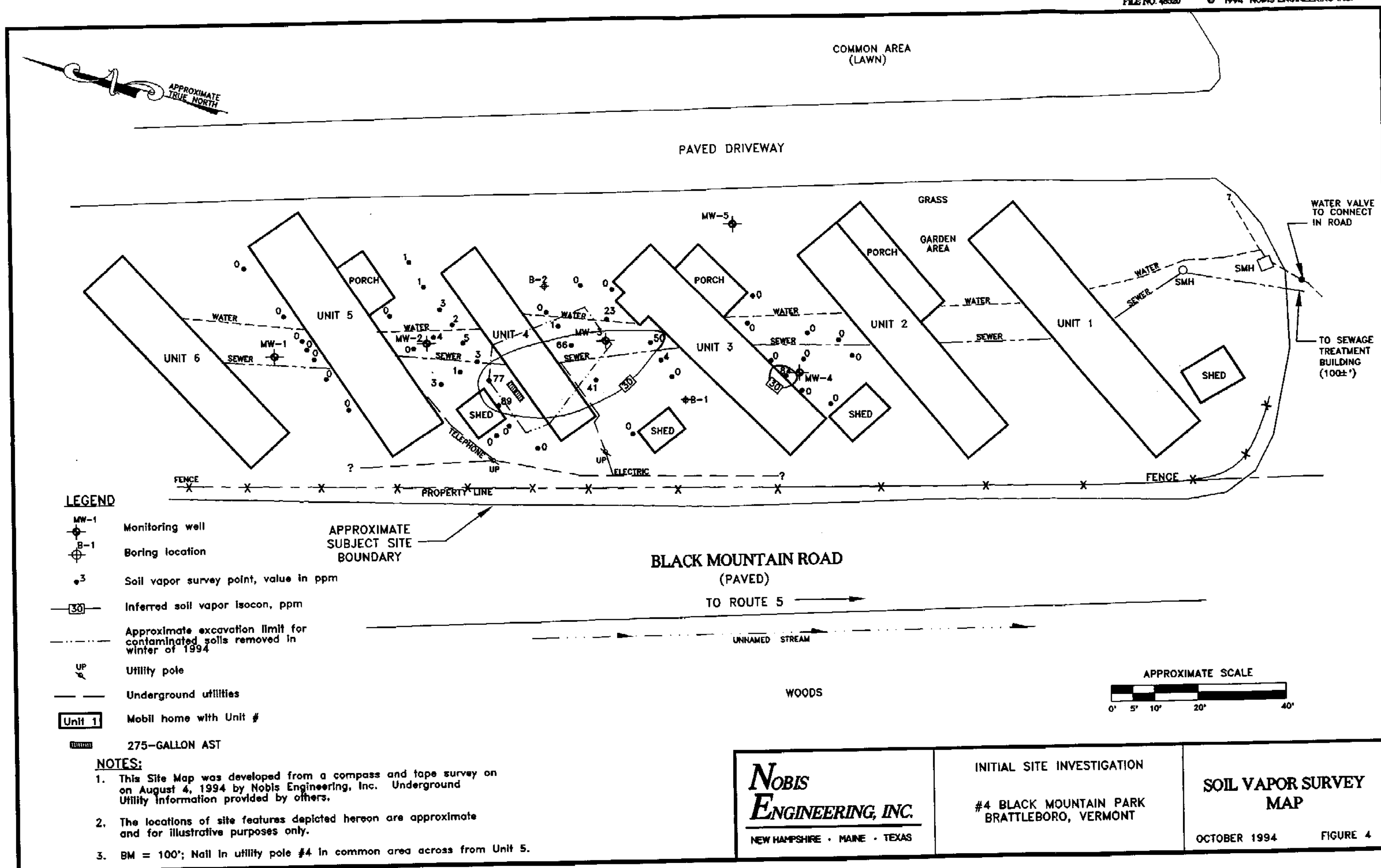


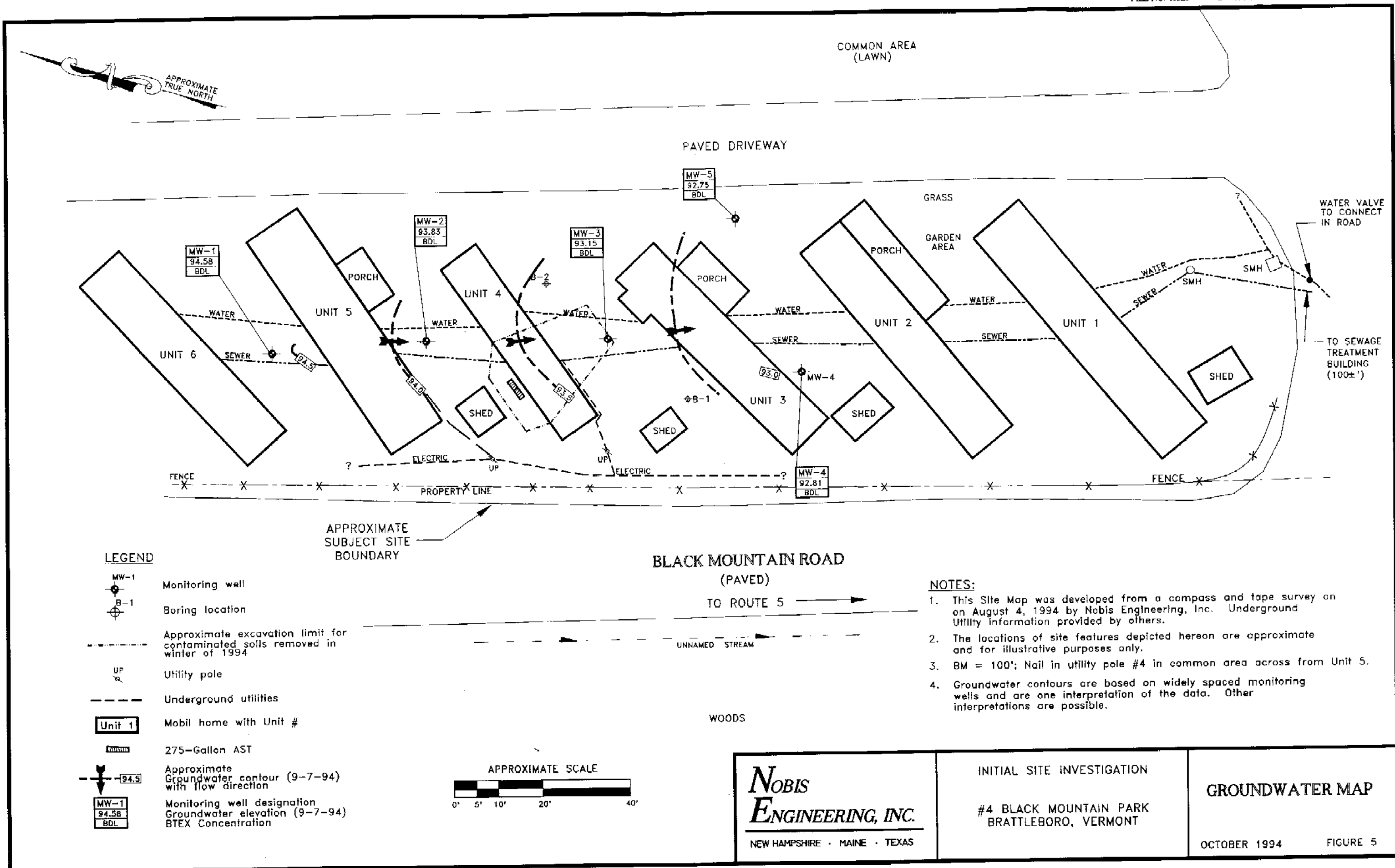
**NOBIS**  
**ENGINEERING, INC.**  
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INITIAL SITE INVESTIGATION  
#4 BLACK MOUNTAIN PARK  
BRATTLEBORO, VERMONT

SITE AREA SKETCH  
OCTOBER 1994 FIGURE 2







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## APPENDIX A

### LIMITATIONS

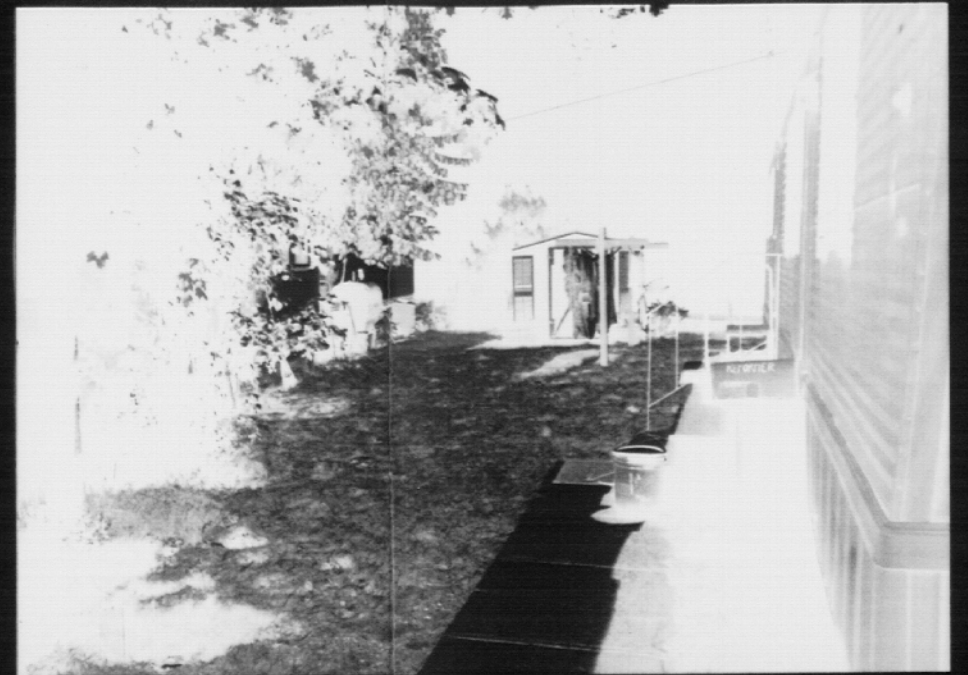
- 1) This environmental assessment was performed in accordance with generally accepted practices of other consultants undertaking similar assessments at the same time and in the same geographical area. The results of this preliminary assessment are based on our professional judgment and are not scientific certainties. Specifically, Nobis Engineering, Inc. does not and cannot represent that the site contains no hazardous wastes or other latent conditions beyond those observed during this preliminary assessment. No other warranty, express or implied, is made.
- 2) The observations and conclusions presented in this report were made solely on the basis of conditions described thereon and not on scientific tasks or procedures beyond the scope of described services or the budgetary and time constraints imposed by the client. The work described in this report was performed in accordance with the terms and conditions described in our proposal dated July 5, 1994. No other warranty, express or implied, is made.
- 3) Observations were made of the site as indicated in this report. Where access to portions of the site were unavailable or limited, Nobis Engineering, Inc. renders no opinion as to the presence of hazardous wastes or the presence of indirect evidence of hazardous wastes in those portions of the site.
- 4) No property boundary, site feature or topographic surveys of the site were performed by Nobis Engineering, Inc.
- 5) Our services did not include assessments for the presence of pesticides, herbicides, lead paint, urea-formaldehydes, PCBs, asbestos or radon, nor any air quality monitoring, or any chemical analyses of soil, surface water, or groundwater at the site.
- 6) The purpose of this assessment was to assess the physical characteristics of the subject site with respect to the presence of hazardous wastes in the environment in the context of Vermont Statutes Annotated Chapter 159. No attempt was made to check the compliance of present or past owners of the site with federal, state or local laws.
- 7) This assessment has been prepared for the exclusive use of C.A.B. Services, Inc. solely for use in a preliminary environmental evaluation of the site. This report shall not, in whole or in part, be conveyed to any other party without prior written consent of Nobis Engineering, Inc.

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1. LOOKING NORTH AT MOBILE HOMES IN VICINITY OF RELEASE. MOBILE HOME UNIT #3 IS NEAR THE CENTER OF THE PHOTO. (THIRD UNIT FROM LEFT).
2. LOOKING WEST AT EXCAVATED AREA BETWEEN MOBILE HOME UNITS #3 (LEFT) AND 4.
3. LOOKING WEST AT EXCAVATED AREA BETWEEN MOBILE HOME UNITS #4 (LEFT) AND 5.
4. LOOKING NORTHWEST AT BLACK MOUNTAIN PARK FROM THE BLACK MOUNTAIN ROAD OVERPASS FOR INTERSTATE-91.

PHOTOGRAPHS TAKEN BY NOBIS ENGINEERING, INC. IN AUGUST 1994.

**NOBIS**  
**ENGINEERING, INC.**  
NEW HAMPSHIRE • MAINE • TEXAS

INITIAL SITE INVESTIGATION

#4 BLACK MOUNTAIN PARK  
BRATTLEBORO, VERMONT

SELECTED  
SITE PHOTOGRAPHS  
PAGE 1 OF 1

OCTOBER 1994 APPENDIX B



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April 27, 1994

RECEIVED MAR 2 1994

Mr. Chuck Schwer  
Agency of Natural Resources  
Department of Environmental Conservation  
Hazardous Materials Management Division  
103 South Main Street/West Office  
Waterbury, Vermont 05671-0404

Re: Initial Cleanup at the Glodgett Residence, #4 Black Mountain Road MHP, Brattleboro.

Dear Sir:

On Friday, March 25, 1994, C.A.B. Services received verbal notification from Mr. Frank Gallagher of Foremost Insurance Company of a release of approximately 200 gallons of home heating oil at the above referenced site. C.A.B. Services personnel arrived on-site that day to visually inspect the aboveground fuel storage tank (AST) and to manually excavate a test pit in that area. Initial observations indicated that the AST fuel line apparently had been damaged by falling ice and that oil may have migrated under the Glodgett mobile home.

On Monday, March 28, 1994, C.A.B. Services personnel returned to the site to initiate cleanup. The AST was relocated and personnel removed snow cover from the work area. Approximately five (5) cubic yards of petroleum contaminated soil were excavated from the former location of the AST. Groundwater was encountered at approximately 4' below existing surface grade. Free phase petroleum product was observed on the surface of the water in the excavation. Sorbent pads were used to remove petroleum from the water. Contaminated soil has been stockpiled at the site on two layers of six-mil. polyethylene and covered with the same.

On March 30 through April 1, 1994 the mobile home was relocated and additional contaminated soil was excavated and stockpiled. A total of approximately seventy-five (75) cubic yards of petroleum contaminated soil has been stockpiled on and covered with polyethylene. Further excavation was not feasible at this time due to shallow groundwater and close proximity to adjacent mobile homes.

Soil samples from the completed excavation area were collected for field analysis. Field analyses were performed with a Photovac MicroTIP organic vapor meter (OVM) equipped with a photoionization detector (PID). The MicroTIP responds readily to most volatile organic compounds (VOC's) but does not register methane or natural components of air such as oxygen, nitrogen or carbon dioxide.

*Environmental Evaluations*

*Tanks - Cleaning, Removal and Disposal      Spills - Cleanup, Prevention  
Ground Water Recovery and Monitoring      Pumping - Liquids and Solids*

*If you have a problem we're here to help*

*P.O. BOX 8, DOVER, NH 03820 - TWENTY-FOUR HOUR SERVICES (603) 749-6355*

The MicroTIP OVM/PID detection limit is approximately one part per million (ppm) by volume, referenced to an isobutylene-in-air standard. Soil samples were collected from 4.0' to 4.5' below grade (base of excavation). VOC's detected in the field analysis ranged from 12.7 parts per million (ppm) along the base of the east sidewall of the excavation to 688 ppm along the base of the north sidewall. The completed excavation area measured 11' (east side) x 24' (south side) x 22'6" (west side) x 23' (north side).

Samples have been collected from the stockpiled contaminated soil for laboratory analysis. Analytical results will be forwarded to a permitted facility in New Hampshire to determine if the material is acceptable for recycling. Upon acceptance, contaminated soil will be transported to a recycling facility in New Hampshire.

Additional work would be required to determine the full extent of residual soil and groundwater contamination at the site. C.A.B. Services, Inc. would subcontract Nobis Engineering, Inc. to determine the extent of contamination. For the next phase of this project we recommend the following:

- Drilling, installation, sampling and analysis of soil borings and groundwater monitoring wells.
- Determining direction of groundwater flow.
- Identification of potential receptors.

Please call our office at (603)-335-3380 if you have any questions regarding this information. Thank you for your assistance with this project.

Cordially,



Alan M. Bryant

cc: Mr. Frank Gallagher  
Foremost Insurance Company  
P.O. Box 39  
Morrisonville, New York 12963

Mr. Patrick Mulheren  
Nobis Engineering, Inc.  
6 Garvin Falls Road  
Concord, New Hampshire 03301

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## **APPENDIX D**

### **FIELD PROCEDURES**

#### **Test borings**

The test borings were generally performed in accordance with ASTM method D1452 using 4-1/4-inch I.D. hollow-stem auger drilling techniques with no water or drilling fluid being introduced into the borehole during drilling. The soil samples were generally obtained in accordance with ASTM method D1586 at 5-foot intervals using a 24-inch split spoon sampler driven by a 140-pound hammer free-falling a distance of approximately 30 inches. The number of blows required to drive the sampler each 6-inch increment over the 24-inch interval was recorded. The sum of the blows for the interval from 6 to 18 inches is referred to as the Standard Penetration Test (SPT) N-value and gives an indication of the density of the soil. The soil samples collected during drilling were placed in glass jars with Teflon-lined caps for future reference.

#### **Field Screening of Soils**

The soil samples collected during drilling were screened for total concentrations of volatile organic compounds (VOCs) using a MicroTIP organic vapor meter (OVM) equipped with a photoionization detector. The MicroTIP OVM is equipped with a 10.6 eV bulb and has a detection limit of 1 ppm by volume referenced to an isobutylene-in-air standard. The tightly-capped soil samples were allowed to equilibrate to room temperature. Immediately prior to screening, the jar sample was shaken vigorously for approximately 30 seconds. A measurement of the total VOCs within the headspace of the jar sample was then obtained by loosening the cap, slightly lifting one side of the cap, and inserting the OVM probe tip between the lip of the jar and the cap. The maximum OVM reading was recorded and the cap was placed back on the jar.

#### **Groundwater Monitoring Well Installations**

Groundwater monitoring wells were installed in selected test borings upon completion of the borings. The wells consisted of 2-inch I.D. Schedule 40 PVC well screen and riser pipe. The well screen consisted of 0.010-inch machine-slotted sections of PVC pipe. The threaded PVC well sections were joined without the use of cement or glue. A clean filter sand was placed surrounding the well screen. An approximately six-inch thick bentonite seal was placed above the filter sand to limit the potential infiltration of water along the well. Formation material was then backfilled into the borehole to the ground surface. Each well was completed with a steel curb box to protect the well from tampering and vandalism. A concrete surface seal was placed around each well installation upon completion. Details of the monitoring well construction are included on the boring logs in the appendices.

#### **Well Elevation Survey**

A well elevation survey was performed by Nobis Engineering, Inc. using a laser level. Well elevations were obtained for the top of the PVC riser pipe of each well, referenced to an assumed benchmark elevation of 100.00 feet established where shown on Figure 3. Well elevation data are included in this report.

#### **Groundwater Sampling Procedures**

Groundwater levels were measured in each well prior to sampling using a Solinst electronic water level indicator. The wells were purged of at least three times the standing volume of water in the wells using a pre-cleaned high density polyethylene (HDPE) disposable bailer. After purging the wells, groundwater samples were collected using the same dedicated bailer. Separate bailers were used for each well to limit the potential for cross-contamination. The first bailer volume was observed for the possible presence of a floating product layer. The water samples were placed in appropriate sample containers supplied by the laboratory and placed in an ice-filled cooler for delivery to the laboratory.



### Surface Water Sampling Procedures

A sample of the surface water was collected by dipping an appropriate sample container supplied by the laboratory into the stream at a free flowing point in the channel. The container was filled to just full and capped. The sealed container was then placed in an ice-filled cooler for delivery to the laboratory.

### Drinking Water Supply Sampling Procedures

The drinking water supply was first checked to determine if it was filtered between the well and the faucet designated for sample collection. If necessary the filter was bypassed before a sample was obtained. Water from the well was allowed to flow for sufficient time to purge the control taste and supply lines of any standing water (about 5 minutes). The water samples were collected in appropriate sample containers supplied by the laboratory and placed in an ice-filled cooler for delivery to the laboratory.

# APPENDIX

# SUMMARY OF BURMISTER CLASSIFICATION SYSTEM

CLASSIFICATION OF SOIL COMPONENTS				
PRINCIPAL COMPONENT	DESCRIPTIVE PARTICLE SIZE	SMALLEST DIAMETER OF ROLLED THREADS (IN)	SIEVE SIZE	OVERALL PLASTICITY AND PLASTICITY INDEX
GRAVEL	Coarse Fine	-	3/4" to 3"	-
SAND	Coarse Medium Fine	-	No. 10 to No. 4 No. 40 to No. 10 No. 200 to No. 40	- - -
SILT	-	None	Passing No. 200	Non-plastic 0
CLAYEY-SILT	-	1/4	Passing No. 200	Slight 1 to 5
SILT & CLAY	-	1/8	Passing No. 200	Low 5 to 10
CLAY & SILT	-	1/16	Passing No. 200	Medium 10 to 20
SILTY-CLAY	-	1/32	Passing No. 200	High 20 to 40
CLAY	-	1/64	Passing No. 200	Very High 40 and greater
PEAT	Partially decomposed fibrous organic matter without living fibers			

IDENTIFICATION OF DESCRIPTIVE TERMS	
DESCRIPTION OF SOIL COMPONENTS	DEFINING RANGE OF PERCENTAGES BY WEIGHT
<u>Principal Component</u>  GRAVEL, SAND, SILT, CLAY, SILT & CLAY, etc.	50 or more
<u>Minor Component</u>  AND  and coarse to fine Sand and Clayey-Silt, etc.	35 to 50
SOME  some Silt, some fine Sand, etc.	20 to 35
LITTLE  little coarse to fine Sand, little Silt, etc.	10 to 20
TRACE  trace Silty-Clay, trace fine Sand, trace Gravel	1 to 10

DEFINITION OF TERMS IDENTIFYING THE GRADATION OF THE GRANULAR COMPONENT	
GRADATION DESIGNATIONS FOR IDENTIFICATION	DEFINING PROPORTIONS
fine to coarse	all fractions greater than 10 percent
medium to coarse	less than 10 percent fine
fine to medium	less than 10 percent coarse
medium	less than 10 percent coarse and fine
fine	less than 10 percent coarse and medium

DENSITY OR CONSISTENCY	
GRANULAR SOILS	
Standard Penetration Resistance (N Value) Blows/foot*	Density
0-4	Very loose
4-10	Loose
10-30	Medium dense
30-50	Dense
50+	Very dense
PLASTIC SOILS	
0-2	Very soft
2-4	Soft
4-8	Medium
8-15	Stiff
15-30	Very stiff
30+	Hard
* 140 lb. hammer free-falling 30 inches for the 6- to 18-inch interval of the split-spoon drive. Per ASTM D1586.	

GLOSSARY OF MISCELLANEOUS TERMS
<p><b>PLUS (+)</b> nearer the upper limit of the proportion or overall plasticity</p> <p><b>MINUS (-)</b> nearer the lower limit of the proportion or overall plasticity</p> <p><b>NO SIGN</b> - middle range of the proportion or overall plasticity</p> <p><b>COBBLES</b> - Rounded pieces of rock between 3 to 6 inches</p> <p><b>BOULDERS</b> - Rounded pieces of rock larger than 6 inches</p> <p><b>ROCK FRAGMENTS</b> - Angular pieces of rock which have separated from parent rock and are present in a soil matrix.</p> <p><b>QUARTZ</b> - A hard silica mineral often found in some glacial deposits</p> <p><b>IRONITE</b> - Cemented deposits of iron oxide within a soil layer</p> <p><b>VARVED DEPOSITS</b> - Alternating light and dark layers of cohesive soils and silts deposited as glacial lake sedimentation</p> <p><b>FISSURED CLAYS</b> - Cohesive soils exhibiting a joint structure, generally slightly to highly overconsolidated</p>

**ORGANIC MATTER** (Excluding Peat): Topsoil - Surficial soils that support plant life and which contain considerable amounts of organic matter; Decomposed Vegetation - Partially decomposed organic matter which retains its original character; Humus - Completely decomposed organic matter

**FILL** - Man-made deposits containing soil, rock or foreign matter

**PROBABLE FILL** - Soils which contain no visually detectable foreign matter but which are suspect with respect to origin

**LENSES** - 0 to 1/2 inch layer


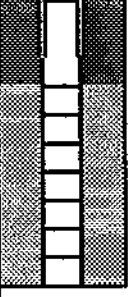
**LAYERS** - 1/2 to 12-inch layer

**POCKET** - Discontinuous layers less than 12 inches

**STRATUM** - Continuous layers greater than 12 inches

**COLOR SHADES** - Light or dark to indicate substantial differences in color

**MOISTURE CONDITIONS** - Wet, moist, or dry per visual observation

 <b>CONCORD • NEW HAMPSHIRE</b>				<b>PROJECT</b>  #4 Black Mountain Park Brattleboro, Vermont				BORING NO. <u>B-1</u> SHEET <u>1</u> of <u>1</u> FILE NO. <u>48520</u> CHKD. BY <u>MPM</u>																								
BORING Co. <u>Great Works Test Boring, Inc.</u> DRILLER <u>Dave Dionne</u> ENGINEER <u>G.W. Graaskamp</u>				BORING LOCATION <u>See Site Sketch</u> TOP OF PVC ELEVATION <u>TBM</u> DATE START <u>8/9/94</u> DATE END <u>8/9/94</u>																												
Sampler: Unless otherwise noted, sampler consists of a 2-inch split spoon driven by a 140-lb. hammer free-falling 30". Casing: Unless otherwise noted, casing driven using a 300-lb. hammer falling 24". Casing Size: <u>Other: 4-1/4-inch I.D. hollow-stem auger</u>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5">Groundwater Readings (from top of PVC)</th> </tr> <tr> <th>Date</th> <th>Time</th> <th>Depth</th> <th>Elev.</th> <th>Stabilization Time</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>				Groundwater Readings (from top of PVC)					Date	Time	Depth	Elev.	Stabilization Time															
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Date	Time	Depth	Elev.	Stabilization Time																												
DEPTH	SAMPLE				SAMPLE DESCRIPTION		STRATUM DESC.	WELL		REMARKS																						
	No.	PEN/ REC.	DEPTH (ft.)	BLOWS / 6"	BURMISTER CLASSIFICATION			INSTALLATION																								
5	S-1	2/1.1	0-2	2-3-5-9	S-1: Medium brown (5YR 3/4), fine to medium SAND, trace Silt, damp, no odor. S-2: Same.		4.5		Curb Box Concrete seal Bentonite seal 2" PVC riser pipe  2" PVC well screen (0.5 to 10.0)  Filter sand	1																						
	S-2	2/1.2	2-4	13-6-2-2																												
	S-3	2/1.2	4-6	4-9-11-13	S-3: Medium brown (5YR 3/4) with grayish tint, medium to coarse SAND, fine to coarse Gravel (phyllite), damp to moist, no odor. S-4: Same. S-5: Medium olive brown (5Y 4/4), fine SAND, little Silt, wet, no odor.																											
	S-4	2/1.1	6-8	16-15-7-5																												
	S-5	2/1.4	8-10	4-4-5-4																												
10					Bottom of boring at 10 feet.  No Ledge.		8.0	S-5																								
15																																
20																																
25																																
30																																
35																																
REMARKS: 1) Groundwater first noted at approximately 5 feet.																																
NOTES: 1) Stratification lines represent approximate boundaries between soil types; Actual transitions may be gradual and varied. 2) Fluctuations in water levels will occur due to conditions different from those present at the time these measurements were made.																																



CONCORD • NEW HAMPSHIRE

## PROJECT

#4 Black Mountain Park

Brattleboro, Vermont

BORING NO. B-2

SHEET 1 of 1

FILE NO. 48520

CHKD. BY RBK

BORING Co. great Works Test Boring, Inc.  
DRILLER Dave Dione  
ENGINEER G.W. Graaskamp,BORING LOCATION See Site Sketch  
TOP OF PVC ELEVATION TBM  
DATE START 8/9/94 DATE END 8/9/94

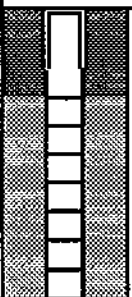
Sampler: Unless otherwise noted, sampler consists of a 2-inch split spoon driven by a 140-lb. hammer free-falling 30".

Casing: Unless otherwise noted, casing driven using a 300-lb. hammer falling 24".

Casing Size: Other: 4-1/4-inch I.D. hollow-stem auger

## Groundwater Readings (from top of PVC)

Date	Time	Depth	Elev.	Stabilization Time

DEPTH	SAMPLE				SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESC.	WELL INSTALLATION		REMARKS
	No.	PEN/ REC.	DEPTH (ft.)	BLOWS / 6"					
5	S-1	2/0.9	0-2	6-11-3-2	S-1: Medium brown (5YR 3/4), fine to medium SAND, trace Silt, damp, no odor.	S-1,2		Curb Box Concrete seal Bentonite seal 2" PVC riser pipe  2" PVC well screen (0.5 to 10.0')  Filter sand	1
	S-2	2/1.4	2-4	4-6-6-3	S-2: Same.	4.0			
	S-3	2/1.0	4-6	8-11-20-20	S-3: Medium brown (5YR 3/4) with grayish tint, medium to coarse SAND, fine to coarse Gravel (phyllite), damp to moist, no odor.	S-3,4			
	S-4	2/0.4	6-8	25-20-13-9	S-4: Medium olive brown (5Y 4/4), fine SAND, little Silt, wet, no odor.	8.0			
	S-5	2/0.9	8-10	6-6-6-6		S-5			
10									2
15									
20									
25									
30									
35									

## REMARKS:

- 1) Groundwater first noted at approximately 5 feet.
- 2) Groundwater monitoring well installed to a depth of approximately 10 feet upon completion of boring.

## NOTES:

- 1) Stratification lines represent approximate boundaries between soil types; Actual transitions may be gradual and varied.
- 2) Fluctuations in water levels will occur due to conditions different from those present at the time these measurements were made.

<b>NOBIS</b> <b>ENGINEERING, INC.</b> CONCORD • NEW HAMPSHIRE				<b>PROJECT</b> #4 Black Mountain Park Brattleboro, Vermont				BORING NO. <u>MW-1</u> SHEET <u>1</u> of <u>1</u> FILE NO. <u>48520</u> CHKD. BY <u>MPM</u>																												
BORING Co. <u>Great Works Test Boring, Inc.</u> DRILLER <u>Dave Dionne</u> ENGINEER <u>G.W. Graaskamp</u>				BORING LOCATION <u>See Site Sketch</u> TOP OF PVC ELEVATION <u>TBM</u> DATE START <u>8/9/94</u> DATE END <u>8/9/94</u>																																
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D E P T H	SAMPLE				SAMPLE DESCRIPTION BURMISTER CLASSIFICATION		STRATUM DESC.	WELL INSTALLATION	R E M A R K S																											
	No.	PEN/ REC.	DEPTH (ft.)	BLOWS / 6"																																
5	S-1	2/1.2	0-2	1-2-2-3	S-1: Medium brown (5YR 3/4), fine to medium SAND, trace Silt, damp, no odor. S-2: Medium brown (5YR 3/4) with grayish tint, medium to coarse SAND, fine to coarse Gravel (phyllite), damp, no odor. S-3: Same.		25		1																											
	S-2	2/1.1	2-4	2-2-11-13																																
	S-3	2/1.1	4-6	12-19-16-19																																
	S-4		8-10	Auger																																
10					S-4: Medium olive brown (5Y 4/4), fine SAND, little Silt, wet, no odor.  Bottom of boring at 10 feet.  No Ledge.		8.0		2																											
15																																				
20																																				
25																																				
30																																				
35																																				
REMARKS: 1) Groundwater first noted at approximately 5 feet. 2) Groundwater monitoring well installed to a depth of approximately 10 feet upon completion of boring.																																				
NOTES: 1) Stratification lines represent approximate boundaries between soil types; Actual transitions may be gradual and varied. 2) Fluctuations in water levels will occur due to conditions different from those present at the time these measurements were made.																																				

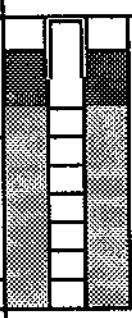


CONCORD • NEW HAMPSHIRE

## PROJECT

#4 Black Mountain Park  
Brattleboro, VermontBORING NO. MW-2  
SHEET 1 of 1  
FILE NO. 48520  
CHKD. BY MPMBORING Co. Great Works Test Boring, Inc.  
DRILLER Dave Dionne  
ENGINEER G.W. GraaskampBORING LOCATION See Site Sketch  
TOP OF PVC ELEVATION TBM  
DATE START 8/9/84 DATE END 8/9/84Sampler: Unless otherwise noted, sampler consists of a 2-inch split spoon driven by a 140-lb. hammer free-falling 30".  
Casing: Unless otherwise noted, casing driven using a 300-lb. hammer falling 24".

Casing Size: Other: 4-1/4-inch I.D. hollow-stem auger

DEPTH H	SAMPLE				SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESC.	WELL INSTALLATION		REMARKS
	No.	PEN/ REC.	DEPTH (ft)	BLOWS / 6"					
5	S-1	2/1.2	0-2	2-3-4-5	S-1: Medium brown (5YR 3/4), fine to medium SAND, trace Silt, damp, no odor. S-2: Same.	S-1,2 4.0		Curb Box Concrete seal Bentonite seal 2" PVC riser pipe  2" PVC well screen (0.5 to 10.0')  Filter sand	1
	S-2	2/1.3	2-4	4-2-2-3					
	S-3	2/1.3	4-6	9-9-7-5	S-3: Medium brown (5YR 3/4) with grayish tint, medium to coarse SAND, fine to coarse Gravel (phyllite), damp to moist, no odor. S-4: Medium olive brown (5Y 4/4), fine SAND, little Silt, wet, no odor.	S-3 8.5			
	S-4	2/1.0	6-8	17-7-5-4					
10					Bottom of boring at 10 feet.				2
15					No Ledge.				
20									
25									
30									
35									

## REMARKS:

- Groundwater first noted at approximately 5 feet.
- Groundwater monitoring well installed to a depth of approximately 10 feet upon completion of boring.

## NOTES:

- Stratification lines represent approximate boundaries between soil types; Actual transitions may be gradual and varied.
- Fluctuations in water levels will occur due to conditions different from those present at the time these measurements were made.

 <b>CONCORD • NEW HAMPSHIRE</b>				<b>PROJECT</b> #4 Black Mountain Park Brattleboro, Vermont				BORING NO. <span style="float: right;">MW-3</span> SHEET <span style="float: right;">1 of 1</span> FILE NO. <span style="float: right;">48520</span> CHKD. BY <span style="float: right;">MPM</span>			
				BORING Co. <span style="float: right;">Great Works Test Boring, Inc.</span> DRILLER <span style="float: right;">Dave Dionne</span> ENGINEER <span style="float: right;">G.W. Graaskamp</span>				BORING LOCATION <span style="float: right;">See Site Sketch</span> TOP OF PVC ELEVATION <span style="float: right;">TBM</span> DATE START <span style="float: right;">8/9/94</span> DATE END <span style="float: right;">8/9/94</span>			

Sampler: Unless otherwise noted, sampler consists of a 2-inch split spoon driven by a 140-lb. hammer free-falling 30". Casing: Unless otherwise noted, casing driven using a 300-lb. hammer falling 24". Casing Size: <span style="float: right;">Other: 4-1/4-inch I.D. hollow-stem auger</span>				Groundwater Readings (from top of PVC)					
				Date	Time	Depth	Elev.	Stabilization	Time

DEPTH	SAMPLE				SAMPLE DESCRIPTION		STRATUM	WELL INSTALLATION	REMARKS
	No.	PEN/REC.	DEPTH (ft.)	BLOWS / 6"	BURMISTER	CLASSIFICATION			
5	S-1	2/1.2	0-2	6-5-4-9	S-1: Medium brown (5YR 3/4), fine to medium SAND, trace Silt, trace fine to medium Gravel, damp, slight fuel odor. S-2: Same, fuel odor. S-3: Medium brown (5YR 3/4), medium to coarse SAND, some fine to medium Gravel, rounded fragments, damp/moist, fuel odor. S-4: Medium brown (5YR 3/4) with grayish tint, medium to coarse SAND, fine to coarse Gravel (phyllite), damp to moist, no odor. S-5: Medium olive brown (5Y 4/4), fine SAND, little Silt, wet, no odor.	S-1,2 4.0 5.0± S-3 7.5 S-4 S-5		Curb Box Concrete seal Bentonite seal 2" PVC riser pipe  2" PVC well screen (0.5 to 10.0')  Filter sand	1
	S-2	2/1.2	2-4	9-6-3-6					
	S-3	2/1.0	4-6	9-12-13-16					
	S-4	2/0.1	6-8	18-10-10-8					
	S-5	2/1.1	8-10	4-6-4-5					
10					Bottom of boring at 10 feet.  No Ledge.				2
15									
20									
25									
30									
35									

REMARKS:  
 1) Groundwater first noted at approximately 5 feet.  
 2) Groundwater monitoring well installed to a depth of approximately 10 feet upon completion of boring.

NOTES:  
 1) Stratification lines represent approximate boundaries between soil types; Actual transitions may be gradual and varied.  
 2) Fluctuations in water levels will occur due to conditions different from those present at the time these measurements were made.





CONCORD • NEW HAMPSHIRE

## PROJECT

#4 Black Mountain Park  
Brattleboro, Vermont

BORING NO. MW-4

SHEET 1 of 1

FILE NO. 48520

CHKD. BY MPM

BORING Co. Great Works Test Boring, Inc.  
DRILLER Dave Dionen  
ENGINEER G.W. GraaskampBORING LOCATION See Site Sketch  
TOP OF PVC ELEVATION TBM  
DATE START 8/9/94 DATE END 8/9/94

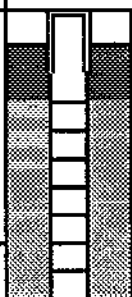
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Casing: Unless otherwise noted, casing driven using a 300-lb. hammer falling 24".

Casing Size: Other: 4-1/4-inch I.D. hollow-stem auger

## Groundwater Readings (from top of PVC)

Date	Time	Depth	Elev.	Stabilization Time

DEPTH	SAMPLE				SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESC.	WELL		REMARKS			
	No.	PEN/ REC.	DEPTH (ft.)	BLOWS / 6"			INSTALLATION					
5	S-1	2/1.3	0-2	4-5-4-8	S-1: Medium brown (5YR 3/4), fine to medium SAND, trace Silt, damp, no odor.	S-1,2 4.5		Curb Box Concrete seal Bentonite seal 2" PVC riser pipe 2" PVC well screen (0.5 to 10.0') Filter sand	1			
	S-2	2/0.3	2-4	9-7-4-4	S-2: Same.							
	S-3	2/0.6	4-6	2-3-10-16	S-3: Medium brown (5YR 3/4) with grayish tint, medium to coarse SAND, fine to coarse Gravel (phyllite), damp to moist, no odor.	S-3,4 8.0						
	S-4	2/1.0	6-8	15-10-6-5	S-4: Same, wet.							
	S-5	2/1.7	8-10	4-3-4-3	S-5: Medium olive brown (5Y 4/4), fine SAND, little Silt, wet, no odor, laminated texture.	S-5						
10									2			
15					Bottom of boring at 10 feet.							
					No Ledge.							
20												
25												
30												
35												

## REMARKS:

- Groundwater first noted at approximately 5 feet.
- Groundwater monitoring well installed to a depth of approximately 10 feet upon completion of boring.

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CONCORD • NEW HAMPSHIRE

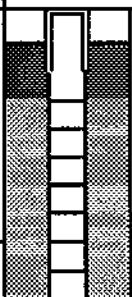
## PROJECT

#4 Black Mountain Park  
Brattleboro, VermontBORING NO. MW-5  
SHEET 1 of 1  
FILE NO. 48520  
CHKD. BY MPMBORING Co. Great Works Test Boring, Inc.  
DRILLER Dave Dionne  
ENGINEER G.W. GraaskampBORING LOCATION See Site Sketch  
TOP OF PVC ELEVATION TBM  
DATE START 8/9/94 DATE END 8/9/94Sampler: Unless otherwise noted, sampler consists of a 2-inch split spoon driven by a 140-lb. hammer free-falling 30".  
Casing: Unless otherwise noted, casing driven using a 300-lb. hammer falling 24".

Casing Size: Other: 4-1/4-inch I.D. hollow-stem auger

## Groundwater Readings (from top of PVC)

Date	Time	Depth	Elev.	Stabilization Time

DEPTH	SAMPLE				SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESC.	WELL					
	No.	PEN/ REC.	DEPTH (ft.)	BLOWS / 6"			INSTALLATION					
5	S-1	2/1.4	0-2	5-5-8-10	S-1: Medium brown (5YR 3/4), fine to medium SAND, trace Silt, damp, no odor.	S-1,2 4.5		Curb Box Concrete seal Bentonite seal 2" PVC riser pipe  2" PVC well screen (0.5 to 10.0')  Filter sand	1			
	S-2	2/0.8	2-4	9-7-3-3	S-2: Same.							
	S-3	2/1.2	4-6	3-9-23-28	S-3: Medium brown (5YR 3/4) with grayish tint, medium to coarse SAND, fine to coarse Gravel (phyllite), damp to moist, no odor.							
10	S-4	2/1.0	6-8	9-13-17-9	S-4: Medium olive brown (5Y 4/4), fine SAND, little Silt, wet, no odor.	S-3,4 8.0						
	S-5	2/1.7	8-10	3-3-2-3		S-5						
15					Bottom of boring at 10 feet.							
					No Ledge.							
20												
25												
30												
35												

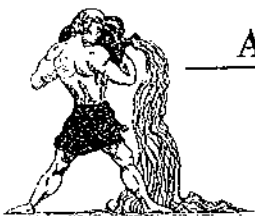
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- Fluctuations in water levels will occur due to conditions different from those present at the time these measurements were made.

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AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

RECEIVED AUG 24 1994

08-23-94, 08:54

Mr. Garret Graaskamp  
Nobis Engineering, Inc.  
P.O. Box 2890  
Concord, N.H. 03302

Dear Mr. Graaskamp:

Please find enclosed the reports, and invoice for the samples that were logged in on, 08-18-94.

AAI Sample	Date Sampled	Project Description	Sample Location
15065	08-09-94	48520, #4 BLACK MTN. PARK	MW-3, S-3
15066	08-09-94	48520, #4 BLACK MTN. PARK	MW-4, S-3
15067	08-09-94	48520, #4 BLACK MTN. PARK	MW-5, S-3

To perform these analyses, the following methods were used:

QTY. EPA Methodologies/Applications

3 VOA + TPH Soil fuel oil Mod. 8260/8100

Thank you for using Aquarian Analytical Inc. on this project.  
If I can be of any further help, please feel free to call.

Sincerely,

William M. Rice  
William M. Rice  
Laboratory Director

doc. L02422



## AQUARIAN ANALYTICAL INC.

*Laboratory Services*

*P.O. Box 186  
Canterbury, N.H. 03224  
603-783-9097*

08-23-94, 08:54

As part of Aquarian's ongoing quality assurance program, all analyses included the following quality assurance measures.

Samples were received in an acceptable condition.

Samples were prepared and analyzed within the appropriate hold time specified in the method referred to on the analyses sheet.

The instrument that was used for the analyses was calibrated and/or tuned at the required frequency.

A daily calibration check was performed.

A daily blank was run, and contamination was not observed at levels that would affect the analyses.

For all work, internal standards, and surrogates gave appropriate response levels.

Matrix spikes were added where appropriate, and recoveries were within the acceptable range.

Duplicates were run at the frequency specified in the applicable state or federal regulations.

In addition to the above steps, all original-raw data is on file at Aquarian Analytical's offices for inspection when required.

Exceptions (if any)

*No deviations were seen.*

*UMR*  
Certification



# AQUARIAN ANALYTICAL INC.

## Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

## Volatile Organic Report

08-23-94, 08:52

Sample 15065

Project = 48520, #4 BLACK MTN. PARK Matrix = Soil

Date Sampled = 08-09-94, 13:05

Sampler = GARRET GRASSKAMP

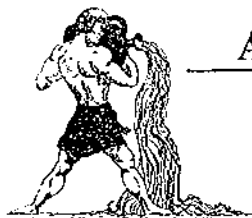
Date Logged In = 08-18-94, 09:11

Location = MW-3, S-3

Date of Analysis = 08-18-94

Town = BRATTLEBORO

Organic Compound	Result ug/kg	Det. Lim. ug/kg
Benzene	BD	350
Bromobenzene	BD	350
Bromodichloromethane	BD	350
Bromoform	BD	350
Bromomethane	BD	350
n-Butylbenzene	668	350
sec-Butylbenzene	BD	350
tert-Butylbenzene	BD	350
Carbon-Tetrachloride	BD	350
Chlorobenzene	BD	350
Chloroethane	BD	700
Chloroform	BD	350
Chloromethane	BD	350
2-Chlorotoluene	BD	350
4-Chlorotoluene	BD	350
Dibromochloromethane	BD	350
1,2 Dibromo-3-Chloropropane	BD	700
1,2 Dibromoethane	BD	700
Dibromomethane	BD	350
1,2 Dichlorobenzene	BD	350
1,3 Dichlorobenzene	BD	350
1,4 Dichlorobenzene	BD	350
Dichlorodifluoromethane	BD	700
1,1 Dichloroethane	BD	350
1,2 Dichloroethane	BD	700
1,1 Dichloroethene	BD	350
cis-1,2 Dichloroethene	BD	350
trans-1,2 Dichloroethene	BD	350
1,2 Dichloropropane	BD	350
1,3 Dichloropropane	BD	350
2,2 Dichloropropane	BD	350
1,1 Dichloropropene	BD	350
cis-1,3 Dichloropropene	BD	350
trans-1,3 Dichloropropene	BD	350
Ethylbenzene	BD	350
Hexachlorobutadiene	BD	350
Isopropylbenzene	BD	350



# AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

Volatile Organic Report

08-23-94, 08:52

Sample 15065

Page 2

Project = 48520, #4 BLACK MTN. PARK  
Location = MW-3, S-3

Matrix = Soil

Organic Compound	Result ug/kg	Det. Lim. ug/kg
p-Isopropyltoluene	980	350
Methylene Chloride	BD	700
Naphthalene	1040	350
n-Propylbenzene	BD	350
Styrene	BD	350
1,1,1,2 Tetrachloroethane	BD	350
1,1,2,2 Tetrachloroethane	BD	350
Tetrachloroethene	BD	350
Toluene	BD	350
1,2,3 Trichlorobenzene	BD	350
1,2,4 Trichlorobenzene	BD	350
1,1,1 Trichloroethane	BD	350
1,1,2 Trichloroethane	BD	350
Trichloroethene	BD	350
Trichlorofluoromethane	BD	700
1,2,3 Trichloropropane	BD	350
1,2,4 Trimethylbenzene	2920	350
1,3,5 Trimethylbenzene	1180	350
Vinyl Chloride	BD	350
o-Xylene	BD	350
m&p-Xylene	389	350
Ethyl Ether	BD	5250
Acetone	BD	35000
Methylethylketone MEK	BD	8750
Methylisobutylketone	BD	8750
Tetrahydrofuran	BD	8750
Methyl-t-butyl ether	BD	350
Total Pet. Hydrocarbons	2000.0	10.0
Method = EPA-8100 (mod.)		Results for TPH are expressed in mg/kg (ppm)

## Comments:

TPH was performed with fuel oil as the standard.

Method of Analyses = EPA-8260

BD = Below Detection Limit - Results are in parts per billion (ppb) unless noted.



# AQUARIAN ANALYTICAL INC.

## Laboratory Services

P.O. Box 186  
Canterbury, N.H. 03224  
603-783-9097

### Volatile Organic Report

08-23-94, 08:52

Sample 15066

Project = 48520, #4 BLACK MTN. PARK Matrix = Soil  
Date Sampled = 08-09-94, 14:45 Sampler = GARRET GRASSKAMP  
Date Logged In = 08-18-94, 09:15 Location = MW-4, S-3  
Date of Analysis = 08-18-94 Town = BRATTLEBORO

Organic Compound	Result ug/kg	Det. Lim. ug/kg
Benzene	BD	10
Bromobenzene	BD	10
Bromodichloromethane	BD	10
Bromoform	BD	10
Bromomethane	BD	10
n-Butylbenzene	BD	10
sec-Butylbenzene	BD	10
tert-Butylbenzene	BD	10
Carbon-Tetrachloride	BD	10
Chlorobenzene	BD	10
Chloroethane	BD	20
Chloroform	BD	10
Chloromethane	BD	10
2-Chlorotoluene	BD	10
4-Chlorotoluene	BD	10
Dibromochloromethane	BD	10
1,2 Dibromo-3-Chloropropane	BD	20
1,2 Dibromoethane	BD	20
Dibromomethane	BD	10
1,2 Dichlorobenzene	BD	10
1,3 Dichlorobenzene	BD	10
1,4 Dichlorobenzene	BD	10
Dichlorodifluoromethane	BD	20
1,1 Dichloroethane	BD	10
1,2 Dichloroethane	BD	20
1,1 Dichloroethene	BD	10
cis-1,2 Dichloroethene	BD	10
trans-1,2 Dichloroethene	BD	10
1,2 Dichloropropane	BD	10
1,3 Dichloropropane	BD	10
2,2 Dichloropropane	BD	10
1,1 Dichloropropene	BD	10
cis-1,3 Dichloropropene	BD	10
trans-1,3 Dichloropropene	BD	10
Ethylbenzene	BD	10
Hexachlorobutadiene	BD	10
Isopropylbenzene	BD	10





# AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

Volatile Organic Report

08-23-94, 08:52

Sample 15066

Page 2

Project = 48520, #4 BLACK MTN. PARK  
Location = MW-4, S-3

Matrix = Soil

Organic Compound	Result ug/kg	Det. Lim. ug/kg
p-Isopropyltoluene	BD	10
Methylene Chloride	BD	20
Naphthalene	BD	10
n-Propylbenzene	BD	10
Styrene	BD	10
1,1,1,2 Tetrachloroethane	BD	10
1,1,2,2 Tetrachloroethane	BD	10
Tetrachloroethene	BD	10
Toluene	BD	10
1,2,3 Trichlorobenzene	BD	10
1,2,4 Trichlorobenzene	BD	10
1,1,1 Trichloroethane	BD	10
1,1,2 Trichloroethane	BD	10
Trichloroethene	BD	10
Trichlorofluoromethane	BD	20
1,2,3 Trichloropropane	BD	10
1,2,4 Trimethylbenzene	BD	10
1,3,5 Trimethylbenzene	BD	10
Vinyl Chloride	BD	10
o-Xylene	BD	10
m&p-Xylene	BD	10
Ethyl Ether	BD	150
Acetone	BD	1000
Methylethylketone MEK	BD	250
Methylisobutylketone	BD	250
Tetrahydrofuran	BD	250
Methyl-t-butyl ether	BD	10
Total Pet. Hydrocarbons	BD	10.0
Method = EPA-8100 (mod.)		Results for TPH are expressed in mg/kg (ppm)

## Comments:

TPH was performed with fuel oil as the standard.

Method of Analyses = EPA-8260

BD = Below Detection Limit - Results are in parts per billion  
(ppb) unless noted.



# AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

## Volatile Organic Report

08-23-94, 08:52

Sample 15067

Project = 48520, #4 BLACK MTN. PARK Matrix = Soil

Date Sampled = 08-09-94, 14:05

Sampler = GARRET GRASSKAMP

Date Logged In = 08-18-94, 09:15

Location = MW-5, S-3

Date of Analysis = 08-18-94

Town = BRATTLEBORO

Organic Compound	Result ug/kg	Det. Lim. ug/kg
Benzene	BD	25
Bromobenzene	BD	25
Bromodichloromethane	BD	25
Bromoform	BD	25
Bromomethane	BD	25
n-Butylbenzene	BD	25
sec-Butylbenzene	BD	25
tert-Butylbenzene	BD	25
Carbon-Tetrachloride	BD	25
Chlorobenzene	BD	25
Chloroethane	BD	50
Chloroform	BD	25
Chloromethane	BD	25
2-Chlorotoluene	BD	25
4-Chlorotoluene	BD	25
Dibromochloromethane	BD	25
1,2 Dibromo-3-Chloropropane	BD	50
1,2 Dibromoethane	BD	50
Dibromomethane	BD	25
1,2 Dichlorobenzene	BD	25
1,3 Dichlorobenzene	BD	25
1,4 Dichlorobenzene	BD	25
Dichlorodifluoromethane	BD	50
1,1 Dichloroethane	BD	25
1,2 Dichloroethane	BD	50
1,1 Dichloroethene	BD	25
cis-1,2 Dichloroethene	BD	25
trans-1,2 Dichloroethene	BD	25
1,2 Dichloropropane	BD	25
1,3 Dichloropropane	BD	25
2,2 Dichloropropane	BD	25
1,1 Dichloropropene	BD	25
cis-1,3 Dichloropropene	BD	25
trans-1,3 Dichloropropene	BD	25
Ethylbenzene	BD	25
Hexachlorobutadiene	BD	25
Isopropylbenzene	BD	25



# AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

Volatile Organic Report

08-23-94, 08:52

Sample 15067

Page 2

Project = 48520, #4 BLACK MTN. PARK  
Location = MW-5, S-3

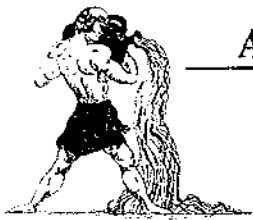
Matrix = Soil

Organic Compound	Result ug/kg	Det. Lim. ug/kg
p-Isopropyltoluene	BD	25
Methylene Chloride	BD	50
Naphthalene	BD	25
n-Propylbenzene	BD	25
Styrene	BD	25
1,1,1,2 Tetrachloroethane	BD	25
1,1,2,2 Tetrachloroethane	BD	25
Tetrachloroethene	BD	25
Toluene	BD	25
1,2,3 Trichlorobenzene	BD	25
1,2,4 Trichlorobenzene	BD	25
1,1,1 Trichloroethane	BD	25
1,1,2 Trichloroethane	BD	25
Trichloroethene	BD	25
Trichlorofluoromethane	BD	50
1,2,3 Trichloropropane	BD	25
1,2,4 Trimethylbenzene	BD	25
1,3,5 Trimethylbenzene	BD	25
Vinyl Chloride	BD	25
o-Xylene	BD	25
m&p-Xylene	BD	25
Ethyl Ether	BD	375
Acetone	BD	2500
Methylethylketone MEK	BD	625
Methylisobutylketone	BD	625
Tetrahydrofuran	BD	625
Methyl-t-butyl ether	BD	25
Total Pet. Hydrocarbons	BD	10.0
Method = EPA-8100 (mod.)		Results for TPH are expressed in mg/kg (ppm)

## Comments:

- TPH was performed with fuel oil as the standard.
- Method of Analyses = EPA-8260
- BD = Below Detection Limit - Results are in parts per billion
- (ppb) unless noted.

[illegible]



# AQUARIAN ANALYTICAL INC.

## Laboratory Services

P.O. Box 186  
Canterbury, N.H. 03224  
603-783-9097  
09-13-94, 11:57

Mr. Garret Grasskamp  
Nobis Engineering, Inc.  
P.O. Box 2890  
Concord, N.H. 03302

RECEIVED SEP 15 1994

Dear Mr. Grasskamp:

Please find enclosed the reports, and invoice for the samples that were logged in on, 09-08-94.

AAI Sample	Date Sampled	Project Description	Sample Location
15429	09-07-94	48520 BLACK MOUNTAIN PARK	MW-1
15430	09-07-94	48520 BLACK MOUNTAIN PARK	MW-2
15431	09-07-94	48520 BLACK MOUNTAIN PARK	MW-3
15432	09-07-94	48520 BLACK MOUNTAIN PARK	MW-4
15433	09-07-94	48520 BLACK MOUNTAIN PARK	MW-5


To perform these analyses, the following methods were used:

QTY. EPA Methodologies/Applications

5	EPA-624	Volatile Organics
---	---------	-------------------

Thank you for using Aquarian Analytical Inc. on this project.  
If I can be of any further help, please feel free to call.

Sincerely,

  
William M. Rice  
Laboratory Director  
doc. L02481



AQUARIAN ANALYTICAL INC.

*Laboratory Services*

*P.O. Box 186  
Canterbury, N.H. 03224  
603-783-9097*

09-13-94, 11:57

As part of Aquarian's ongoing quality assurance program, all analyses included the following quality assurance measures.

Samples were received in an acceptable condition.

Samples were prepared and analyzed within the appropriate hold time specified in the method referred to on the analyses sheet.

The instrument that was used for the analyses was calibrated and/or tuned at the required frequency.

A daily calibration check was performed.

A daily blank was run, and contamination was not observed at levels that would affect the analyses.

For all work, internal standards, and surrogates gave appropriate response levels.

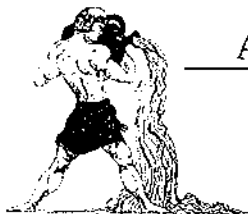
Matrix spikes were added where appropriate, and recoveries were within the acceptable range.

Duplicates were run at the frequency specified in the applicable state or federal regulations.

In addition to the above steps, all original-raw data is on file at Aquarian Analytical's offices for inspection when required.

Exceptions (if any)

UMR  
Certification



# AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

## Volatile Organic Report

09-13-94, 11:54

Sample 15429

Sample Matrix = Water Project = 48520 BLACK MOUNTAIN PA  
Date Sampled = 09-07-94, 14:15 Person Sampling = RICHARD CHASE  
Date Logged In = 09-08-94, 09:12 Location = MW-1  
Date of Analysis = 09-11-94 Town = BRATTLEBORO

Organic Compound	Result ug/L	Det. Lim. ug/L
Bromodichloromethane	BD	2
Chlorodibromomethane	BD	2
Bromoform	BD	2
Chloroform	BD	2
Carbon Tetrachloride	BD	2
dichloromethane	BD	4
1,1-dichloroethane	BD	2
1,2-dichloroethane	BD	4
1,1,1-trichloroethane	BD	2
1,1,2-trichloroethane	BD	2
1,1-dichloroethylene	BD	2
Trichloroethylene	BD	2
Tetrachloroethylene	BD	2
1,2-Dichloroethylene (c)	BD	2
1,2-Dichloroethylene (t)	BD	2
Chloroethane	BD	4
Vinylchloride	BD	4
Bromomethane	BD	2
Chloromethane	BD	2
Trichlorofluoromethane	BD	4
Trichlorotrifluoroethane	BD	4
Benzene	BD	2
Toluene	BD	2
Ethylbenzene	BD	2
m&p-Xylene	BD	2
o-Xylene	BD	2
Chlorobenzene	BD	2
1,1-dichlorobenzene	BD	2
1,3-dichlorobenzene	BD	2
1,4-dichlorobenzene	BD	2
1,1,4-trichlorobenzene	BD	2
Styrene	BD	2
Acetone	BD	200
Tetrahydrofuran	BD	50
Diethylether	BD	30
Methyl t-butyl ether	BD	2
Methyl isobutyl ketone	BD	50
Methyl ethyl ketone	BD	50
Carbon Disulfide	BD	4

### Comments:

Method of VOA Analyses = EPA-8240

BD = Below Detection Limit



# AQUARIAN ANALYTICAL INC.

## Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

### Volatile Organic Report

09-13-94, 11:54

Sample 15430

Sample Matrix = Water Project = 48520 BLACK MOUNTAIN PA  
Date Sampled = 09-07-94, 14:00 Person Sampling = RICHARD CHASE  
Date Logged In = 09-08-94, 09:14 Location = MW-2  
Date of Analysis = 09-11-94 Town = BRATTLEBORO

Organic Compound	Result ug/L	Det. Lim. ug/L
Bromodichloromethane	BD	2
Chlorodibromomethane	BD	2
Bromoform	BD	2
Chloroform	BD	2
Carbon Tetrachloride	BD	2
dichloromethane	BD	4
1,1-dichloroethane	BD	2
1,2-dichloroethane	BD	4
1,1,1-trichloroethane	BD	2
1,1,2-trichloroethane	BD	2
1,1-dichloroethylene	BD	2
Trichloroethylene	BD	2
Tetrachloroethylene	BD	2
1,2-Dichloroethylene (c)	BD	2
1,2-Dichloroethylene (t)	BD	2
Chloroethane	BD	4
Vinylchloride	BD	4
Bromomethane	BD	2
Chloromethane	BD	2
Trichlorofluoromethane	BD	4
Trichlorotrifluoroethane	BD	4
Benzene	BD	2
Toluene	BD	2
Ethylbenzene	BD	2
m&p-Xylene	BD	2
o-Xylene	BD	2
Chlorobenzene	BD	2
1,1-dichlorobenzene	BD	2
1,3-dichlorobenzene	BD	2
1,4-dichlorobenzene	BD	2
1,1,4-trichlorobenzene	BD	2
Styrene	BD	2
Acetone	BD	200
Tetrahydrofuran	BD	50
Diethylether	BD	30
Methyl t-butyl ether	BD	2
Methyl isobutyl ketone	BD	50
Methyl ethyl ketone	BD	50
Carbon Disulfide	BD	4

#### Comments:

Method of VOA Analyses = EPA-8240

BD = Below Detection Limit





# AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

## Volatile Organic Report

09-13-94, 11:54

Sample 15431

Sample Matrix = Water Project = 48520 BLACK MOUNTAIN PA  
Date Sampled = 09-07-94, 13:45 Person Sampling = RICHARD CHASE  
Date Logged In = 09-08-94, 09:14 Location = MW-3  
Date of Analysis = 09-11-94 Town = BRATTLEBORO

Organic Compound	Result ug/L	Det. Lim. ug/L
Bromodichloromethane	BD	2
Chlorodibromomethane	BD	2
Bromoform	BD	2
Chloroform	BD	2
Carbon Tetrachloride	BD	2
dichloromethane	BD	4
1,1-dichloroethane	BD	2
1,2-dichloroethane	BD	4
1,1,1-trichloroethane	BD	2
1,1,2-trichloroethane	BD	2
1,1-dichloroethylene	BD	2
Trichloroethylene	BD	2
Tetrachloroethylene	BD	2
1,2-Dichloroethylene (c)	BD	2
1,2-Dichloroethylene (t)	BD	2
Chloroethane	BD	4
Vinylchloride	BD	4
Bromomethane	BD	2
Chloromethane	BD	2
Trichlorofluoromethane	BD	4
Trichlorotrifluoroethane	BD	4
Benzene	BD	2
Toluene	BD	2
Ethylbenzene	BD	2
m&p-Xylene	BD	2
o-Xylene	BD	2
Chlorobenzene	BD	2
1,1-dichlorobenzene	BD	2
1,3-dichlorobenzene	BD	2
1,4-dichlorobenzene	BD	2
1,1,4-trichlorobenzene	BD	2
Styrene	BD	2
Acetone	BD	200
Tetrahydrofuran	BD	500
Diethylether	BD	300
Methyl t-butyl ether	BD	2
Methyl isobutyl ketone	BD	50
Methyl ethyl ketone	BD	50
Carbon Disulfide	BD	4

### Comments:

Method of VOA Analyses = EPA-8240

BD = Below Detection Limit



# AQUARIAN ANALYTICAL INC.

Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

## Volatile Organic Report

09-13-94, 11:54

Sample 15432

Sample Matrix = Water Project = 48520 BLACK MOUNTAIN PA  
Date Sampled = 09-07-94, 13:30 Person Sampling = RICHARD CHASE  
Date Logged In = 09-08-94, 09:15 Location = MW-4  
Date of Analysis = 09-12-94 Town = BRATTLEBORO

Organic Compound	Result ug/L	Det. Lim. ug/L
Bromodichloromethane	BD	2
Chlorodibromomethane	BD	2
Bromoform	BD	2
Chloroform	BD	2
Carbon Tetrachloride	BD	2
dichloromethane	BD	4
1,1-dichloroethane	BD	2
1,2-dichloroethane	BD	4
1,1,1-trichloroethane	BD	2
1,1,2-trichloroethane	BD	2
1,1-dichloroethylene	BD	2
Trichloroethylene	BD	2
Tetrachloroethylene	BD	2
1,2-Dichloroethylene (c)	BD	2
1,2-Dichloroethylene (t)	BD	2
Chloroethane	BD	4
Vinylchloride	BD	4
Bromomethane	BD	2
Chloromethane	BD	2
Trichlorofluoromethane	BD	4
Trichlorotrifluoroethane	BD	4
Benzene	BD	2
Toluene	BD	2
Ethylbenzene	BD	2
m&p-Xylene	BD	2
o-Xylene	BD	2
Chlorobenzene	BD	2
1,1-dichlorobenzene	BD	2
1,3-dichlorobenzene	BD	2
1,4-dichlorobenzene	BD	2
1,1,4-trichlorobenzene	BD	2
Styrene	BD	2
Acetone	BD	200
Tetrahydrofuran	BD	50
Diethylether	BD	30
Methyl t-butyl ether	BD	2
Methyl isobutyl ketone	BD	50
Methyl ethyl ketone	BD	50
Carbon Disulfide	BD	4

### Comments:

Method of VOA Analyses = EPA-8240

BD = Below Detection Limit



# AQUARIAN ANALYTICAL INC.

## Laboratory Services

P.O. Box 186

Canterbury, N.H. 03224

603-783-9097

### Volatile Organic Report

09-13-94, 11:54

Sample 15433

Sample Matrix = Water Project = 48520 BLACK MOUNTAIN PA  
Date Sampled = 09-07-94, 13:15 Person Sampling = RICHARD CHASE  
Date Logged In = 09-08-94, 09:15 Location = MW-5  
Date of Analysis = 09-12-94 Town = BRATTLEBORO

Organic Compound	Result ug/L	Det. Lim. ug/L
Bromodichloromethane	BD	2
Chlorodibromomethane	BD	2
Bromoform	BD	2
Chloroform	BD	2
Carbon Tetrachloride	BD	2
dichloromethane	BD	4
1,1-dichloroethane	BD	2
1,2-dichloroethane	BD	4
1,1,1-trichloroethane	BD	2
1,1,2-trichloroethane	BD	2
1,1-dichloroethylene	BD	2
Trichloroethylene	BD	2
Tetrachloroethylene	BD	2
1,2-Dichloroethylene (c)	BD	2
1,2-Dichloroethylene (t)	BD	2
Chloroethane	BD	4
Vinylchloride	BD	4
Bromomethane	BD	2
Chloromethane	BD	2
Trichlorofluoromethane	BD	4
Trichlorotrifluoroethane	BD	4
Benzene	BD	2
Toluene	BD	2
Ethylbenzene	BD	2
m&p-Xylene	BD	2
o-Xylene	BD	2
Chlorobenzene	BD	2
1,1-dichlorobenzene	BD	2
1,3-dichlorobenzene	BD	2
1,4-dichlorobenzene	BD	2
1,1,4-trichlorobenzene	BD	2
Styrene	BD	2
Acetone	BD	200
Tetrahydrofuran	BD	50
Diethylether	BD	30
Methyl t-butyl ether	BD	2
Methyl isobutyl ketone	BD	50
Methyl ethyl ketone	BD	50
Carbon Disulfide	BD	4

#### Comments:

Method of VOA Analyses = EPA-8240

BD = Below Detection Limit



A  
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X  
  
G

RECEIVED SEP 29 1994

EST. 1975

P.O. BOX 359, EPSOM, NH 03234 (603) 798-4557 - FAX (603) 798-5641

### CERTIFICATE OF DESTRUCTION

THIS IS TO CERTIFY that the waste materials described as  
80.37 tons of soils containing petroleum hydrocarbon  
contamination which were delivered to MTS Inc. on 5/9/94  
thru - originating from Black Mountain Rd,  
Brattleboro, VT were processed and incorporated with similar  
aggregate into bituminous asphaltic cold mix product on  
7/9/94 thru - as evidenced by the attached completed  
Bill Of Lading number 7979 thru 7981 which constitutes the  
entire amount of soils delivered for project number 25:4054:1

This processing was carried out in strict accordance with the  
provisions of permit for pug mill cold patch mix process, number  
TP-BP-332, granted from the State of New Hampshire Department of  
Environmental Services, Air Resources Division, effective August  
7, 1990.

Stephen R. Soren 9-28-94  
Processing Foreman Date

Rita M. Frazier 9-28-94  
Compliance Officer Date



environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

RECEIVED APR 20 1994

April 19, 1994

Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

Re: Foremost - Brattleboro Vt.

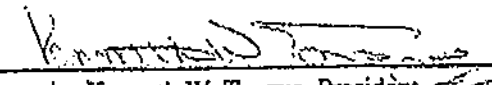
Enclosed are the results of the analyses on your sample(s). Please see individual reports for specific methodologies and references.

If you have any further questions on the analytical methods or these results, do not hesitate to call.

<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Remarks</u>
32689-1	4/1/94	Petroleum Cont Soil Stockpile	Waste Characterization	

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine and Massachusetts.  
A list of actual certified tests is available upon request.

Authorized signature

  
Kenneth W. Teague, President



environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

April 19, 1994

Client Project: Foremost - Brattleboro Vt.  
Project Number:  
Station ID: Petroleum Cont. Soil Stockpile

Lab #: 32689-1  
Matrix: Soil  
Collection Date: 4/1/94  
Lab Receipt Date: 4/11/94  
Analysis Date: 4/11/94


### FLASH POINT ANALYSIS

Sample	Result
32689-1	>165 degrees Fahrenheit

**Methodology:** Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, EPA SW-846, Method 1010."

**Comments:**

Authorized signature

  
Kenneth W. Teague, President





environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

April 19, 1994

Client Project: Foremost - Brattleboro Vt.  
Project Number:  
Station ID: Petroleum Cont. Soil Stockpile

Lab #: 32689-1  
Matrix: Soil  
Collection Date: 4/1/94  
Lab Receipt Date: 4/11/94  
Analysis Date: 4/12/94

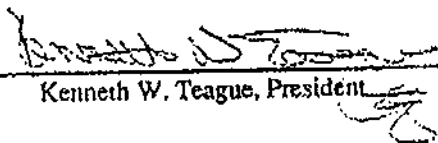
### pH ANALYSIS

Sample	Result
32689-1	5.44 pH

**Methodology:** Aqueous sample analysis was conducted according to "EPA 600 Method 150.1," and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 9045A."

**Comments:**

Authorized signature

  
Kenneth W. Teague, President



environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

April 19, 1994

Mr. Alan Bryant  
C. A. B. Services, Inc.

P.O. Box 8  
Dover, NH 03820

**CLIENT SAMPLE ID**

Client Project: Foremost - Brattleboro Vt.  
Project Number:  
Station ID: Petroleum Cont. Soil Stockpile

**SAMPLE DATA**

Lab #: 32689-1  
Matrix: Soil  
Percent Solid: 82  
Dilution Factor: 12  
Collection Date: 4/1/94  
Lab Receipt Date: 4/11/94  
Analysis Date: 4/13/94

**ANALYTICAL RESULTS VOLATILE ORGANICS**

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Vinyl chloride	60	ND	Benzene	60	ND
1,1-Dichloroethene	60	ND	Toluene	60	76
1,2-Dichloroethene (cis or trans)	60	ND	Ethylbenzene	60	930
Trichloroethene	60	ND	m-Xylene	60	225
Tetrachloroethene	60	ND	o&p-Xylene	60	3398
Chloromethane	60	ND	Methyl t-butyl ether	60	ND
Methylene chloride	60	ND	m-Dichlorobenzene	60	ND
Chloroform	60	ND	o-Dichlorobenzene	60	ND
Carbon tetrachloride	60	ND	p-Dichlorobenzene	60	ND
Bromodichloromethane	60	ND	1,2-Dichloropropane	60	ND
Dibromochloromethane	60	ND	cis-1,3-Dichloropropene	60	ND
Bromomethane	60	ND	trans-1,3-Dichloropropene	60	ND
Chloroethane	60	ND	2-Chloroethyl vinyl ether	180	ND
1,1-Dichloroethane	60	ND	Acetone	180	ND
1,2-Dichloroethane	60	ND	Methyl ethyl ketone	120	ND
1,1,1-Trichloroethane	60	ND	Methyl isobutyl ketone	120	ND
1,1,2-Trichloroethane	60	ND	Tetrahydrofuran	180	ND
1,1,2,2-Tetrachloroethane	60	ND	Styrene	60	ND
Chlorobenzene	60	ND	Carbon disulfide	60	ND
Bromoform	60	ND	Vinyl acetate	180	ND
Dichlorodifluoromethane	60	ND	2-Hexanone	120	ND
Trichlorofluoromethane	60	ND			
<b>Surrogate Standard Recovery</b>					
d4-1,2-Dichloroethane	77 %	d8-Toluene	82 %	Bromofluorobenzene	90 %
ND=None Detected <=Less than >=Greater than PR=Present but not calibrated for					

**METHODOLOGY:** Aqueous sample analysis was conducted according to "40 CFR Part 136, EPA Method 624" and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8240A."

**COMMENTS:** Results are expressed on a dry weight basis.

Authorized signature

Kenneth W. Teague, President



environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

April 19, 1994

Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

**SAMPLE DATA**

Lab #: 32689-1  
Matrix: Soil  
Percent Solid: 82  
Dilution Factor: 2.4  
Collection Date: 4/1/94  
Lab Receipt Date: 4/11/94  
Extraction Date: 4/12/94  
Analysis Date: 4/15/94

**CLIENT SAMPLE ID**

Client Project: Foremost - Brattleboro Vt  
Project Number:  
Station ID: Petroleum Cont. Soil Stockpile

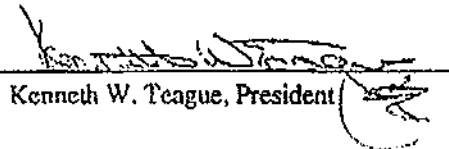
**ANALYTICAL RESULTS**

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Aldrin	60	ND	Endrin	60	ND
a-BHC	60	ND	Endrin Aldehyde	60	ND
b-BHC	60	ND	Heptachlor	60	ND
d-BHC	60	ND	Heptachlor Epoxide	60	ND
g-BHC (Lindane)	60	ND	Methoxychlor	240	ND
Chlordane	60	ND	Toxaphene	240	ND
4,4'-DDD	60	ND	PCB-1016	120	ND
4,4'-DDE	60	ND	PCB-1221	120	ND
4,4'-DDT	60	ND	PCB-1232	120	ND
Dieldrin	60	ND	PCB-1242	120	ND
Endosulfan I	60	ND	PCB-1248	120	ND
Endosulfan II	60	ND	PCB-1254	120	ND
Endosulfan Sulfate	60	ND	PCB-1260	120	ND
			PCB-1262	120	ND
<b>Surrogate Standard Recovery</b>					
	2,4,5,6-Tetrachloro-m-xylene	58 %			
	Decachlorobiphenyl	102 %			
ND=None Detected    <=Less than    >=Greater than    PR=Present but not calibrated for					

**Methodology:** Aqueous sample analysis was conducted according to "40 CFR Part 136, EPA Method 608," and other matrices were analyzed according to "Test Method for Evaluating Solid Waste, SW-846 Method 8080."

**Comments:** Results are expressed on a dry weight basis.

Authorized signature

  
Kenneth W. Teague, President



environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

April 19, 1994

**Client Project:** Foremost - Brattleboro Vt.  
**Project Number:**  
**Station ID:** Petroleum Cont. Soil Stockpile

**Lab #:** 32689-1  
**Matrix:** Soil  
**Percent Solid:** 82  
**Dilution Factor:** 1.1  
**Collection Date:** 4/1/94  
**Lab Receipt Date:** 4/11/94  
**Analysis Date:** 4/12/94

#### REACTIVITY

	Result	Units	Detection Limit
<b>Sulfide Reactivity:</b>	ND	mg/kg	11

ND denotes none detected.

**Methodology:** Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846, Sulfide by Modified Method 7.3.4.2."

**Comments:** Results are expressed on a dry weight basis.

Authorized signature

  
Kenneth W. Teague, President



environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

April 19, 1994

**Client Project:** Foremost - Brattleboro Vt.  
**Project Number:**  
**Station ID:** Petroleum Cont. Soil Stockpile

**Lab #:** 32689-1  
**Matrix:** Soil  
**Percent Solid:** 82  
**Dilution Factor:** 1.2  
**Collection Date:** 4/1/94  
**Lab Receipt Date:** 4/11/94  
**Analysis Date:** 4/12/94

#### REACTIVITY

	Result	Units	Detection Limit
Cyanide Reactivity:	ND	mg/kg	12

ND denotes none detected.

**Methodology:** Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846, Cyanide by Modified Method 7.3.3.2."

**Comments:** Results are expressed on a dry weight basis.

Authorized signature

  
Kenneth W. Teague, President



environmental  
laboratory inc.

196 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

CLIENT SAMPLE ID

Client Project: Foremost - Brattleboro Vt.

Project Number:

Station ID: Petroleum Cont. Soil Stockpile

April 19, 1994

SAMPLE DATA

Lab #: 32689-1  
Matrix: Soil  
Percent Solid: 82  
Dilution Factor: 1.3  
Collection Date: 4/1/94  
Lab Receipt Date: 4/11/94  
Extraction Date: 4/12/94  
Analysis Date: 4/15/94

ANALYTICAL RESULTS SEMI-VOLATILES

PAGE TWO

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
<b>BASE NEUTRAL COMPOUNDS:</b>					
Acenaphthene	390	ND	N-Nitrosodimethylamine	390	ND
Acenaphthylene	390	ND	N-Nitrosodi-n-propylamine	390	ND
Anthracene	390	ND	N-Nitrosodiphenylamine	390	ND
Benz[a]anthracene	390	ND	Pyridine	390	ND
Benzo[a]pyrene	390	ND	2-Methylnaphthalene	390	ND
Benzo(b)fluoranthene	390	ND	2-Chloronaphthalene	390	ND
Benzo[ghi]perylene	390	ND	Naphthalene	390	ND
Benzo(k)fluoranthene	390	ND	Phenanthrene	390	400
Chrysene	390	ND	Dibenzofuran	390	ND
Dibenz[a,h]anthracene	390	ND	Aniline	390	ND
Fluoranthene	390	ND	4-Chloroaniline	390	ND
Fluorene	390	ND	2-Nitroaniline	390	ND
Indeno[1,2,3-cd]pyrene	390	ND	3-Nitroaniline	390	ND
Pyrene	390	ND	4-Nitroaniline	390	ND
Hexachloroethane	390	ND	Carbazole	390	ND
Isophorone	390	ND			

Base Neutral Surrogate Standard Recovery

d5-Nitrobenzene 143 % 2-Fluorobiphenyl 131 % d14-p-Terphenyl 90 %

ND= None Detected <=Less than >=Greater than PR= Present but not calibrated for

**METHODOLOGY:** Aqueous sample analysis was conducted according to "40 CFR Part 136, EPA Method 625," and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8270A."

**COMMENTS:** Results are expressed on a dry weight basis.

Authorized signature

Kenneth W. Teague, President



environmental  
laboratory inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

Mr. Alan Bryant  
C. A. B. Services, Inc.

P.O. Box 8

Dover,

NH 03820

CLIENT SAMPLE ID

Client Project: Foremost - Brattleboro Vt.

Project Number:

Station ID: Petroleum Cont. Soil Stockpile

April 19, 1994

SAMPLE DATA

Lab #: 32689-1

Matrix: Soil

Percent Solid: 82

Dilution Factor: 1.3

Collection Date: 4/1/94

Lab Receipt Date: 4/11/94

Extraction Date: 4/12/94

Analysis Date: 4/15/94

ANALYTICAL RESULTS

SEMI-VOLATILES

PAGE ONE

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
<u>ACID COMPOUNDS:</u>					
2-Chlorophenol	390	ND	Pentachlorophenol	1300	ND
4-Chloro-3-methylphenol	1300	ND	Phenol	390	ND
2,4-Dichlorophenol	390	ND	2,4,5-Trichlorophenol	390	ND
2,4-Dimethylphenol	390	ND	2,4,6-Trichlorophenol	390	ND
2,4-Dinitrophenol	390	ND	Benzoic Acid	1300	ND
4,6-Dinitro-2-methylphenol	390	ND	o-Cresol	390	ND
2-Nitrophenol	390	ND	m,p-Cresol	390	ND
2,6-Dichlorophenol	390	ND	Benzyl alcohol	390	ND
4-Nitrophenol	390	ND	2,3,4,6-Tetrachlorophenol	390	ND
<u>Acid Surrogate Standard Recovery</u>					
2,4,6-Tribromophenol	74 %	2-Fluorophenol	87 %	d5-Phenol	127 %

BASE NEUTRAL COMPOUNDS:

1,2-Dichlorobenzene	390	ND	Hexachlorobenzene	390	ND
1,3-Dichlorobenzene	390	ND	Benzidine	2600	ND
1,4-Dichlorobenzene	390	ND	3,3'-Dichlorobenzidine	2600	ND
2,4-Dinitrotoluene	390	ND	Azobenzene	390	ND
2,6-Dinitrotoluene	390	ND	Bis (2-chloroethoxy) methane	390	ND
Nitrobenzene	390	ND	Bis (2-chloroethyl) ether	390	ND
Hexachlorobutadiene	390	ND	Bis (2-chloroisopropyl) ether	390	ND
Dimethyl phthalate	390	ND	4-Bromophenyl phenyl ether	390	ND
Di-n-butyl phthalate	390	ND	Butyl benzyl phthalate	390	ND
Di-n-octyl phthalate	390	ND	4-Chlorophenyl phenyl ether	390	ND
Bis (2-ethylhexyl) phthalate	390	ND	Diethyl phthalate	390	ND
1,2,4-Trichlorobenzene	390	ND	Hexachlorocyclopentadiene	390	ND

ND= None Detected

<=Less than

>=Greater than

PR= Present but not calibrated for

**METHODOLOGY:** Aqueous sample analysis was conducted according to "40 CFR Part 136, EPA Method 625," and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8270A."

Authorized signature

Kenneth W. Teague, President

THE SCOTT LANSOM GROUP, LTD.  
P.O. BOX 894, CONCORD, NEW HAMPSHIRE 03301  
(603) 228-3610

Analytics Environmental Lab.  
P.O. Box 433 195 Commerce Way  
Portsmouth  
NH 03801

Report Date : April 15, 1994  
Date Sampled : 4/1/94  
Date Received : 4/12/94  
Sampler :  
Project : Foremost - Brattleboro, VT

Sample Description: Petroleum Cont., Soil  
Stockpile

SIG Lab No.	Analyte	Analytical Method	mg/L	Date Analyzed	Analyst
51729-1	Arsenic	SW-846-7900	<0.0010	4/15/94	JP
51729-2	Boron	SW-846-7080	<0.5	4/15/94	JP
51729-3	Cadmium	SW-846-7130	<0.02	4/15/94	JP
51729-4	Chromium	SW-846-7190	<0.04	4/15/94	JP
51729-5	Lead	SW-846-7420	<0.20	4/15/94	JP
51729-6	Mercury	SW-846-7470	<0.0020	4/14/94	JP
51729-7	Selenium	SW-846-6010	<0.100	4/14/94	JB
51729-8	Silver	SW-846-7750	<0.02	4/14/94	JP

Reviewed By: Stephanie Roy

Approved By: [Signature]  
Beverly Eber Jordin, Lab Manager

\* Sample was analyzed outside of EPA holding time.

< = less than.

All analyses performed in accordance with U.S.E.P.A. SW-846 Methodology.  
Standard Methods for the Examination of Water or methods as stated.  
Units are in milligrams per liter or as noted.



Mr. Alan Bryant  
C. A. B. Services, Inc.  
P.O. Box 8  
Dover, NH 03820

April 19, 1994

**SAMPLE DATA**

Lab #: 32689-1  
Matrix: Soil  
Percent Solid: 82  
Dilution Factor: 1.2  
Collection Date: 4/1/94  
Lab Receipt Date: 4/11/94  
Extraction Date: 4/13/94  
Analysis Date: 4/18/94

**CLIENT SAMPLE ID**  
Client Project: Foremost - Brattleboro Vt.

Project Number:  
Station ID: Petroleum Cont. Soil Stockpile

**ANALYTICAL RESULTS CHLORINATED HERBICIDES**

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Dichloroprop	120	ND
Dalapon	180	ND
2,4-D	120	ND
2,4,5-TP	120	ND
2,4,5-T	120	ND
Dicamba	120	ND
MCPA	12000	ND
MCPP	12000	ND
2,4-DB	180	ND
<b>Surrogate Standard Recovery</b>		
2,4-Dichlorophenylacetic acid	94%	
ND=None Detected    <=Less than    >=Greater than    PR=Present but not calibrated for		

**METHODOLOGY:** Aqueous sample analysis was conducted according to "40 CFR Part 136, EPA Method 615," and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8150A."

**COMMENTS:** Results are expressed on a dry weight basis.

Authorized signature

Kenneth W. Toague, President



environmental  
laboratory Inc.

195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-5111

Ms Lisa Fauteux  
M T S, Inc.  
P.O. Box 359  
Epsom, NH 03234

May 2, 1994

**Client Project:** Brattleboro, VT

**Project Number:**

**Station ID:** Brattleboro, VT

**Lab #:** 32780-1

**Matrix:** Soil

**Percent Solid:** 93

**Dilution Factor:** 10

**Collection Date:** 4/25/94

**Lab Receipt Date:** 4/26/94

**Extraction Date:** 4/28/94

**Analysis Date:** 5/2/94

### TOTAL PETROLEUM HYDROCARBON ANALYSIS

Sample	Result	Units	Detection Limit
32780-1	976	mg/kg	10

#### Surrogate Standard Recovery

m-Terphenyl 79 %

**Methodology:** Water samples prepared by Separatory Funnel Liquid/Liquid Extraction, "Test Methods for Evaluating Solid Waste," Method 3510A; other matrices prepared by Sonication Extraction, "Test Methods for Evaluating Solid Waste," Method 3550. All matrices were analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8100."

**Comments:** Results expressed on a dry weight basis. Quantitation performed based on a No. 2 Fuel Oil standard.

Authorized signature

  
Kenneth W. Teague, President

cket No  
20108714

MTS INC.  
RT. 4  
P.O. Box 359  
EPSOM NH 03234

Date :05/09/94  
In :14.58.14  
Out :14.58.37

Customer :4054  
SERVICES, INC.  
O. BOX 8  
VER NH 03825

Order No :2540541  
BRATTLEBORO, VT NO.2  
Load No : 3  
Total Tn : 80.37  
Miles :

1	Truck Out-bound	Gross	73440.00Lbs (K)
		Tare	39420.00Lbs (K)
2	NO.2	Net	34020.00Lbs
			17.01Tns

GH MASTER (BILL) *Bill*

IVER Bazin-Bros #110 28A9L VT

arks

**BILL OF LADING**  
**SOILS CONTAINING VIRGIN PETROLEUM OILS**

BILL OF LADING # No 7981 PROJECT AUTHORIZATION # 25:4054:1 DATE 5/06/94

**AUTHORIZED SIGNATURE:**

**FACILITY:**

MTS, INC.  
RT. 4, 9, & 202  
CHICHESTER, NH  
(603) 798-4557  
PLANT LOCATION: CHICHESTER, NH

**TRANSPORTER NAME/ADDRESS:**

ATL, INC.  
P.O. BOX 623 Bazin Bros  
EPSON, NH 03234 Westminster VT  
(603) 798-2100  
TELEPHONE 802 722-9367

**GENERATOR NAME/ADDRESS:**

BARBARA GLODGETT  
4 BLACK MOUNTAIN PARK  
BLACK MOUNTAIN ROAD  
BRATTLEBORO, VT  
CONTACT PERSON:  
TELEPHONE: (802)-254-9570

**SITE OF GENERATION:**

4 BLACK MOUNTAIN PARK  
BLACK MOUNTAIN ROAD  
BRATTLEBORO, VT 05031

**SOIL DESCRIPTION:**

GASOLINE \_\_\_\_\_ KEROSENE \_\_\_\_\_  
NO. 2 OIL XX NO. 4 OIL \_\_\_\_\_  
NO. 6 OIL \_\_\_\_\_ OTHER \_\_\_\_\_

**QUANTITY:**

WT(TONS) VOL(CU.YDS.)

TOTAL PROJECTED 75  
SHIPPED TO DATE \_\_\_\_\_  
THIS LOAD (EST.) \_\_\_\_\_  
REMAINING TO BE  
SHIPPED \_\_\_\_\_

**CONSULTANT: (If Applicable)**

NAME: CAB SERVICES, INC. ADDRESS: P.O. BOX 8  
TELEPHONE: (603)-335-3380 DOVER, NH 03825

ANALYSIS ATTACHED YES NO

VOLATILES (AS BENZENE) \_\_\_\_\_ PPM

TOTAL PETRO. HYDROCARBON(TPH) \_\_\_\_\_ PPM

GENERATORS SIGNATURE: I hereby certify that the information provided is a true representation of the materials to be shipped and that the soils do not contain other constituents which fall within the definitions of hazardous waste as defined in 40CFR260 and applicable State regulations.

X AGENT FOR Joe Wickett DATE: 5/9/94

**STATE**

AUTHORIZATION SIGNATURE (IF APPLICABLE) \_\_\_\_\_ DATE \_\_\_\_\_ CASE # \_\_\_\_\_

**TRUCK/TRACTOR REGISTRATION**

TRIC 28A92 VT

**TRAILER REGISTRATION**

TRA. AA41827 VT

**LEFT SITE AT:**

5/9 DATE: 12:30 AM/PM

**TRANSPORTERS SIGNATURE:**

**RECEIVING CLERK SIGNATURE:**

DATE 5/9/94 INSPECTED SAT.?

**ARRIVED** \_\_\_\_\_ AM/PM

**TRUCK WT: FULL**

13440

**EMPTY**

39420

**NET**

34,020 17.01 tons

**TICKET NO.**

108714

**TICKET NO.**

**RECORD BY:**

DATED 5/9/94

**PROCESSED DATE**

**CERTIFICATE OF DESTRUCTION SENT**

**PROCESSING FOREMAN SIGNATURE:**

**ADDITIONAL COPIES SENT TO (1)**

(2)

FALSIFICATION OR MISREPRESENTATION OF ANY INFORMATION ON THIS BILL OF LADING IS A VIOLATION OF LAW AND IS SUBJECT TO APPROPRIATE STATUTORY OR REGULATORY PENALTIES.

WHITE: FACILITY COPY

YELLOW: BILLING COPY

PINK: PROCESSING/FACILITY COPY

GOLD: PROCESSING/GENERATOR COPY

cket No  
00108711  
ale #01

MTS INC.  
RT. 4  
P.O. Box 359  
EPSOM NH 03234

Date :05/09/94  
In :10.15.35  
Out :10.28.20

Customer :4054  
3 SERVICES, INC.  
O. BOX 8  
OVER NH 03825

Order No :2540541  
BRATTLEBORO, VT NO.2  
Load No : 2  
Total Tn : 63.36  
Miles :

30	Truck Out-bound	Gross	98720.00Lbs (k)
		Tare	39420.00Lbs
0.2	NO.2	Net	59300.00Lbs
			29.65Tns

IGH MASTER (BILL)

RIVER

arks

*W. M. D. H.*

*Bayin Bus # 110*

# BILL OF LADING

## SOILS CONTAINING VIRGIN PETROLEUM OILS

BILL OF LADING # No 7980 PROJECT AUTHORIZATION # 25:4054:1 DATE 5/06/94

### AUTHORIZED SIGNATURE:

#### FACILITY:

MTS, INC.  
RT. 4, 9, & 202  
CHICHESTER, NH  
(603) 798-4557  
PLANT LOCATION: CHICHESTER, NH

#### TRANSPORTER NAME/ADDRESS:

~~ATL, INC.~~  
~~P.O. BOX 628~~ Barin Bros  
~~SPSOK, NH 03294~~ WESTMINSTER, VT

TELEPHONE (603) 798-4557  
802 722 9367

#### GENERATOR NAME/ADDRESS:

BARBARA GLODGETT  
4 BLACK MOUNTAIN PARK  
BLACK MOUNTAIN ROAD  
BRATTLEBORO, VT  
CONTACT PERSON: \_\_\_\_\_  
TELEPHONE: (802)-254-9570

#### SITE OF GENERATION:

4 BLACK MOUNTAIN PARK  
BLACK MOUNTAIN ROAD  
BRATTLEBORO, VT 05631

#### SOIL DESCRIPTION:

GASOLINE \_\_\_\_\_ KEROSENE \_\_\_\_\_  
NO. 2 OIL XX NO. 4 OIL \_\_\_\_\_  
NO. 6 OIL X OTHER \_\_\_\_\_

#### QUANTITY:

WT(TONS) VOL(CU.YDS.)

TOTAL PROJECTED 75  
SHIPPED TO DATE \_\_\_\_\_  
THIS LOAD (EST.) \_\_\_\_\_  
REMAINING TO BE SHIPPED \_\_\_\_\_

#### CONSULTANT: (If Applicable)

NAME: GAB SERVICES, INC. ADDRESS: P.O. BOX 8  
TELEPHONE: (603)-335-3380 DOVER, NH 03825

ANALYSIS ATTACHED YES NO

VOLATILES (AS BENZENE) \_\_\_\_\_ PPM TOTAL PETRO. HYDROCARBON(TPH) \_\_\_\_\_ PPM

GENERATORS SIGNATURE: I hereby certify that the information provided is a true representation of the materials to be shipped and that the soils do not contain other constituents which fall within the definitions of hazardous waste as defined in 40CFR260 and applicable State regulations.

X AGENT FOR Joseph Willett DATE: 5/9/94

#### STATE

AUTHORIZATION SIGNATURE (IF APPLICABLE) \_\_\_\_\_ DATE \_\_\_\_\_ CASE # \_\_\_\_\_

#### TRUCK/TRACTOR REGISTRATION

TRK # 28A92 VT

#### TRAILER REGISTRATION

TR 444 B27 VT

#### LEFT SITE AT:

5/9/94 DATE: \_\_\_\_\_ AM/PM

#### TRANSPORTERS SIGNATURE:

RECEIVING CLERK SIGNATURE: W. M. M. M. DATE 5-9-94 INSPECTED SAT? \_\_\_\_\_

ARRIVED \_\_\_\_\_ AM/PM

TRUCK WT: FULL 98,720

EMPTY 39,420

NET 59,300

TICKET NO. 10874

TICKET NO. 10874

RECORD BY: Mac DATED 5-9-94

PROCESSED DATE \_\_\_\_\_

CERTIFICATE OF DESTRUCTION SENT \_\_\_\_\_

PROCESSING FOREMAN SIGNATURE: \_\_\_\_\_

ADDITIONAL COPIES SENT TO (1) \_\_\_\_\_

(2) \_\_\_\_\_

FALSIFICATION OR MISREPRESENTATION OF ANY INFORMATION ON THIS BILL OF LADING IS A VIOLATION OF LAW AND IS SUBJECT TO APPROPRIATE STATUTORY OR REGULATORY PENALTIES.

WHITE: FACILITY COPY YELLOW: BILLING COPY PINK: PROCESSING/FACILITY COPY GOLD: PROCESSING/GENERATOR COPY

Ticket No  
00108710

MTS INC.  
RT. 4  
P.O. Box 359  
EPSOM NH 03234

Date : 05/09/94  
In : 09.41.06  
Out : 10.02.40

Scale #01

Customer : 4054  
LAB SERVICES, INC.  
P.O. BOX 8  
DOVER NH 03825

Order No : 2540541  
BRATTLEBORO, VT NO. 2  
Load No : 1  
Total Tn : 33.71  
Miles :

79	Truck Out-bound	Gross	107360.00Lbs(k)
		Tare	39940.00Lbs
NO. 2	NO. 2		
		Net	67420.00Lbs
			33.71Tns

WEIGH MASTER (BILL)

DRIVER

Remarks

*W. McIntire*

*Baylis Bros #112*

# BILL OF LADING SOILS CONTAINING VIRGIN PETROLEUM OILS

BILL OF LADING # No 7979 PROJECT AUTHORIZATION # 25:4054:1 DATE 5/06/94

## AUTHORIZED SIGNATURE:

### FACILITY:

MTS, INC.  
RT. 4, 9, & 202  
CHICHESTER, NH  
(603) 798-4557  
PLANT LOCATION: CHICHESTER, NH

### TRANSPORTER NAME/ADDRESS:

~~ATL, INC.~~ Barin Bros  
~~P.O. BOX 823~~  
~~EPSOM, NH 03234~~ WESTMINSTER VT

TELEPHONE (603) 798-3100  
(802) 722-4136

### GENERATOR NAME/ADDRESS:

BARBARA GLODGETT  
4 BLACK MOUNTAIN PARK  
BLACK MOUNTAIN ROAD  
BRATTLEBORO, VT  
CONTACT PERSON: \_\_\_\_\_  
TELEPHONE: (802) 254-9570

### SITE OF GENERATION:

4 BLACK MOUNTAIN PARK  
BLACK MOUNTAIN ROAD  
BRATTLEBORO, VT 05031

### SOIL DESCRIPTION:

GASOLINE \_\_\_\_\_ KEROSENE \_\_\_\_\_  
NO. 2 OIL: XX NO. 4 OIL \_\_\_\_\_  
NO. 6 OIL: 1 OTHER \_\_\_\_\_

### QUANTITY:

WT(TONS) VOL(CU.YDS.)

TOTAL PROJECTED 75  
SHIPPED TO DATE \_\_\_\_\_  
THIS LOAD (EST.) \_\_\_\_\_  
REMAINING TO BE SHIPPED \_\_\_\_\_

### CONSULTANT: (If Applicable)

NAME: CAB SERVICES, INC. ADDRESS: P.O. BOX 8  
TELEPHONE: (603) 335-3380 DOVER, NH 03825

ANALYSIS ATTACHED YES NO

VOLATILES (AS BENZENE) \_\_\_\_\_ PPM

TOTAL PETRO. HYDROCARBON(TPH) \_\_\_\_\_ PPM

GENERATORS SIGNATURE: I hereby certify that the information provided is a true representation of the materials to be shipped and that the soils do not contain other constituents which fall within the definitions of hazardous waste as defined in 40CFR260 and applicable State regulations.

X AGENT FOR Joseph Willet DATE: 5/9/94

### STATE

AUTHORIZATION SIGNATURE (IF APPLICABLE) \_\_\_\_\_ DATE \_\_\_\_\_ CASE # \_\_\_\_\_

### TRUCK/TRACTOR REGISTRATION

TTK 28A70 VT

### TRAILER REGISTRATION

TTA AA4453 VT

### LEFT SITE AT:

DATE: \_\_\_\_\_ AM/PM

### TRANSPORTERS SIGNATURE:

W. J. P. [Signature]

### RECEIVING CLERK SIGNATURE:

W. J. P. [Signature] DATE 5-9-94 INSPECTED SAT? \_\_\_\_\_

ARRIVED \_\_\_\_\_ AM/PM

TRUCK WT: FULL 107,360

EMPTY 39,940

NET 67,420

TICKET NO. 108710

TICKET NO. 108710

RECORD BY: W. J. P. [Signature] DATED 5-9-94

PROCESSED DATE \_\_\_\_\_

PROCESSING FOREMAN SIGNATURE: \_\_\_\_\_

CERTIFICATE OF DESTRUCTION SENT \_\_\_\_\_

ADDITIONAL COPIES SENT TO (1) \_\_\_\_\_

(2) \_\_\_\_\_

FALSIFICATION OR MISREPRESENTATION OF ANY INFORMATION ON THIS BILL OF LADING IS A VIOLATION OF LAW AND IS SUBJECT TO APPROPRIATE STATUTORY OR REGULATORY PENALTIES.

YELLOW: BILLING COPY PINK: PROCESSING/FACILITY COPY GOLD: PROCESSING/GENERATOR COPY



# APPENDIX

## APPENDIX H

### Transport Velocity

$$V=ki/n$$

where: V = transport velocity (feet/day)  
k = hydraulic conductivity (feet/day)  
i = gradient (feet/feet)  
n = porosity (decimal percentage)

Lithology	k	i	n	V
Sand	0.003 to 0.33	0.1 to 0.2	0.3 to 0.4	0.008 to 0.22
Sand and Gravel	0.003 to 0.33	0.1 to 0.2	0.3 to 0.4	0.008 to 0.22
Sand and Silt	0.003 to 0.033	0.1 to 0.2	0.3 to 0.4	0.0008 to 0.02